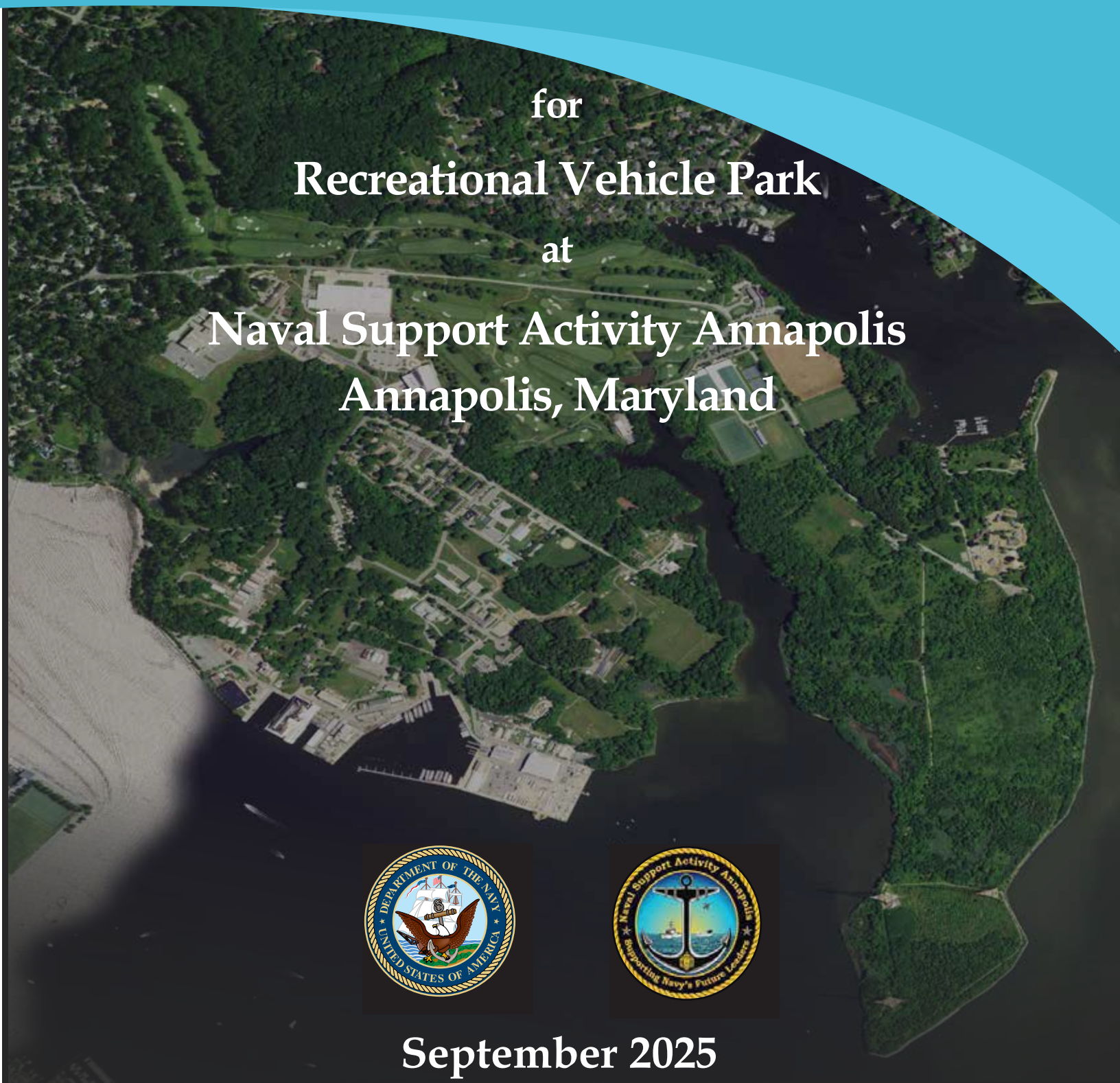
Final
Environmental Assessment



for

Recreational Vehicle Park

at

Naval Support Activity Annapolis
Annapolis, Maryland

September 2025

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Abstract

Designation:	Environmental Assessment
Title of Proposed Action:	Recreational Vehicle Park
Project Location:	Naval Support Activity Annapolis, Annapolis, Maryland
Lead Agency for the EA:	Department of the Navy
Affected Region:	Annapolis, Maryland
Action Proponent:	Naval Support Activity Annapolis
Point of Contact:	Richard Brown NAVFAC Washington 1314 Harwood Street SE Washington Navy Yard, DC 20374 Email address: NAVFACWashNEPA1@navy.mil
Date:	September 2025

Commander, Navy Installations Command, Naval Support Activity Annapolis, prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by Navy NEPA procedures. The Proposed Action would construct a new Recreational Vehicle (RV) Park at Naval Support Activity Annapolis. This facility would include approximately 35–50 new concrete RV pads, utility connections, a Comfort Station (laundry, vending machines, Wi-Fi, and dumpster/recycling pad), landscaping, and a new access road. This EA evaluates the potential environmental effects associated with two action alternatives and the No Action Alternative on the following resource areas: air quality, water resources, geological resources, cultural resources, visual resources, biological resources, land use, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, and socioeconomics.

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Executive Summary

Commander, Navy Installations Command, Naval Support Activity (NSA) Annapolis (hereinafter, Navy), prepared this Environmental Assessment (EA) to evaluate the potential environmental effects of constructing a new Recreational Vehicle (RV) Park at NSA Annapolis. The Navy prepared this EA in accordance with the National Environmental Policy Act (NEPA), as implemented by Navy NEPA procedures.

ES.1 Proposed Action

The Morale, Welfare, and Recreation (MWR) program proposes to construct a new RV Park at NSA Annapolis, featuring 35–50 individual sites with concrete RV pads and adjacent car pads. Four concrete RV pads would meet the Architectural Barriers Act (ABA) Accessibility Standards. Each site would have electrical service, freeze-proof water, and sewer connections. The proposed RV Park would also include tent and primitive camping sites and an ABA-accessible Comfort Station with laundry facilities, unisex cabana-style rooms, vending machines, Wi-Fi, and an enclosed dumpster/recycling pad. Utilities, including a 50-amp hook-up service, would be provided. Trash and recycling would be routinely serviced by a contractor. Natural surroundings would be preserved, and additional trees would be planted. The existing RV Park would remain in use for patrons who do not need ABA accessibility or modernized features.

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to construct an RV Park at NSA Annapolis. The proposed RV Park would include ABA-compliant features, modern campground facilities and RV hook-ups (specifically, size and infrastructure to accommodate newer, larger RVs), and tent and primitive camping sites. The Proposed Action is needed for four reasons:

1. **ABA Accessibility.** Eligible patrons do not have ABA-accessible, MWR program RV Park facilities in the Annapolis, Maryland area. The existing RV Park does not meet the ABA Accessibility Standards.
2. **Military Health.** The mental, physical, and emotional well-being of military personnel positively affects the way military personnel think and act and is crucial for military retention and readiness. The MWR program is tasked with continually identifying additional opportunities for promoting positive military mental and physical health.
3. **Capacity Demand.** The existing RV Park is not large enough to meet the demand for MWR program RV/camping facilities in the region.
4. **Infrastructure Demand.** The existing RV Park does not have adequate infrastructure to meet the demands of modern RVs.

ES.3 Alternatives Considered

The Navy is considering two action alternatives and the No Action Alternative:

- **No Action Alternative:** The Proposed Action would not be implemented, leaving disabled eligible patrons without access to ABA facilities at the NSA Annapolis RV Park. Eligible patrons would be restricted to the existing non-ABA-compliant RV Park, which has only 14 RV sites and 12 tent camping sites, insufficient to meet regional demand. The existing park also lacks

infrastructure for modern, larger RVs. Thus, it would continue to serve only RVs that do not require larger pads and modern amenities. Although it does not meet the project's purpose and need, this alternative is analyzed to provide a baseline for comparison.

- **Alternative 1 — Greenbury Point at Possum Point:** The Proposed Action would be implemented at the northern end of Greenbury Point, adjacent to and east of Hooper High Road, and including part of Beach Circle. The site is approximately 100 feet from the Mill Creek shoreline and Mill Creek Marina and is on elevated land that once housed the Bachelor's Enlisted Quarters, demolished in 2010.

  This alternative would develop approximately 35 RV sites (each with a concrete RV pad and adjacent car pad); and tent and primitive campsites, with at least four ABA-compliant sites. An ABA-compliant Comfort Station would also be constructed. Utilities, including water, wastewater, stormwater, and mostly underground electrical lines, would connect to the site. Trenching or directional bore would be required to install an internet line. A pedestrian walkway/drive aisle would likely link the campsites and facilities to Hooper High Road.

  The disturbance limit for Alternative 1 is approximately 3.25 acres, with around 1 acre of new impervious surface. Most of the site has grass and trees along the edges, which would be preserved as much as possible, requiring minimal tree clearing (approximately 0.5 acres of trees along the southern boundary and some scattered interior trees). Alternative 1 meets the project's purpose and need and all screening factors. Alternative 1 is the Navy's Preferred Alternative for implementing the Proposed Action.

- **Alternative 2 — North Severn Complex at Beach Road:** The Proposed Action would be implemented at the North Severn Complex at Beach Road, just southwest of Kinkaid Road. This site is adjacent to the existing RV Park and includes a grass softball field to the south and a forested area to the northeast. An installation support building, the Retelle Building, is on the southwest portion. The site is approximately 1,109 feet (0.21 miles) from the Severn River.

  Alternative 2 would develop 35–50 RV sites (each with a concrete RV pad and adjacent car pad) and tent and primitive campsites. An access road would connect the site to Beach Road, and utilities would be installed. The Alternative 2 site has steep slopes and uneven terrain, except for the softball field. Development on this site would require clearing and grading. Trees would be preserved to the maximum extent possible, but up to 1.9 acres of trees may need to be cleared due to site grading requirements. Alternative 2 poses two options for the Comfort Station:

  - **Option A:** Construct a new building within the site for the ABA-compliant Comfort Station, retaining the Retelle Building adjacent to the softball field. This would disturb approximately 4.5 acres and create approximately 1.35 acres of new impervious surface.
  - **Option B:** Renovate the Retelle Building for the ABA-compliant Comfort Station. This option would also disturb approximately 4.5 acres but result in slightly less new impervious surface (approximately 1.30 acres) compared to Option A.

ES.4 Summary of Environmental Resources Evaluated in the Environmental Assessment

This EA evaluates the following resource areas in detail for potential significant effects: air quality, water resources, geological resources, cultural resources, visual resources, biological resources, land use,

noise, infrastructure, transportation, and public health and safety. The potential environmental effects on hazardous materials and waste and socioeconomics were initially analyzed; the EA determined there would be minimal effects which are only briefly addressed in this EA.

ES.5 Summary of Potential Environmental Consequences of the Action Alternatives

Table ES-1 summarizes the potential effects on the resources associated with the No Action Alternative and the action alternatives analyzed in this EA.

Table ES-1 Summary of Potential Effects on Resource Areas

Resource Area	***No Action Alternative***	***Alternative 1 (Preferred Alternative)***	***Alternative 2***	
			Option A	***Option B***
Air Quality	No change in existing conditions. No significant effects.	Direct, short- and long-term, minor effects. No significant effects.	Similar to Alternative 1, but slightly more. No significant effects.	Similar to Alternative 1 and Option A, but slightly more. No significant effects.
Water Resources				
Groundwater	No change in existing conditions. No significant effects.	No direct effects. Indirect, short- and long-term, negligible effects. No significant effects.	Similar to Alternative 1, but slightly more long-term effects. No significant effects.	Similar to Option A. No significant effects.
Surface Water and Wetlands	No change in existing conditions. No significant effects.	No direct effects. Indirect, short- and long-term, minor effects. No significant effects.	No direct or indirect effects. No significant effects.	Similar to Option A. No significant effects.
Floodplains	No change in existing conditions. No significant effects.	No direct effects. Indirect, short- and long-term, minor effects. No significant effects.	No direct or indirect effects. No significant effects.	Similar to Option A. No significant effects.
Shorelines	No change in existing conditions. No significant effects.	No direct effects. Indirect, short- and long-term, minor effects. No significant effects.	No direct or indirect effects. No significant effects.	Similar to Option A. No significant effects.

Resource Area	***No Action Alternative***	***Alternative 1 (Preferred Alternative)***	***Alternative 2***	
			Option A	***Option B***
Coastal Zone Management	No change in existing conditions. No significant effects.	Indirect, short- and long-term, minor effects within the coastal zone but shoreline functions would not be impaired. The Navy consulted with Maryland Department of the Environment (MDE) in accordance with the Coastal Zone Management Act (CZMA) and received a conditional concurrence on the determination findings. No significant effects.	Similar to Alternative 1. The Navy consulted with MDE in accordance with the CZMA and received a conditional concurrence on the determination findings. No significant effects.	Similar to Option A. No significant effects.
Geological Resources				
Topography	No change to existing conditions. No significant effects.	Long-term, minor effects. No significant effects.	Long-term, moderate effects. No significant effects.	Similar to Option A, but slightly less. No significant effects.
Soils	No change to existing conditions. No significant effects.	Short- and long-term, minor effects. No significant effects.	Similar to Alternative 1, but slightly more. No significant effects.	Similar to Option A, but slightly less. No significant effects.
Cultural Resources	No change to existing conditions. No significant effects.	No short- or long-term effects on architectural historic properties. No National Register of Historic Places (NRHP)-eligible archaeological sites would be affected, both in the short and long term. The Navy consulted with the Maryland State Historic Preservation Office (SHPO). The SHPO concurred with the finding of no adverse effect under the National Historic Preservation Act (NHPA). No significant effects.	No direct or indirect effects on architectural historic properties and archaeological resources. The Navy consulted with the Maryland SHPO, which concurred with the finding of no adverse effect under NHPA. No significant effects.	Similar to Option A. The Navy consulted with the Maryland SHPO, which concurred with the finding of no adverse effect under NHPA. No significant effects.

Resource Area	***No Action Alternative***	***Alternative 1 (Preferred Alternative)***	***Alternative 2***	
			Option A	***Option B***
Visual Resources	No change to existing conditions. No significant effects.	Short- and long-term, minor effects. No significant effects.	Similar to Alternative 1, but less visible to the public and lower quality visual setting for RV Park patrons. No significant effects.	Similar to Option A, but slightly less. No significant effects.
Biological Resources	No change to existing conditions. No significant effects.	Short- and long-term, minor effects. The Navy coordinated with U.S. Fish and Wildlife Service (USFWS) and Maryland Department of Natural Resources (MDNR). No significant effects.	Similar to Alternative 1, but more effects on wildlife and habitat. The Navy coordinated with USFWS and MDNR. No significant effects.	Similar to Option A. No significant effects.
Land Use	No change to existing conditions. No significant effects.	Short term, minor effects. Compatible with adjacent land use. No significant effects.	Similar to Alternative 1. No significant effects.	Similar to Option A. No significant effects.
Noise	No change to existing conditions. No significant effects.	Short- and long-term, minor effects. No significant effects.	Similar to Alternative 1, but slightly more long-term effects. No significant effects.	Similar to Option A. No significant effects.
Infrastructure	No change to existing conditions. No significant effects.	Short-term, negligible to minor effects. Long-term, minor effects on potable water, wastewater, electrical, and solid waste management. Negligible communications effects. No long-term stormwater capacity effects. No significant effects.	Similar short-term effects as Alternative 1, except no short-term effects on stormwater capacity and slightly more solid waste. Similar long-term effects, but slightly greater. No significant effects.	Similar to Option A. No significant effects.
Transportation	No change to existing conditions. No significant effects.	Short- and long-term, minor effects. No significant effects.	Similar to Alternative 1. No significant effects.	Similar to Option A. No significant effects.
Public Health and Safety	Long-term, minor effects. No significant effects.	Short- and long-term, minor effects. Long-term, minor, beneficial effects on the health of eligible patrons. No significant effects.	Similar to Alternative 1. No significant effects.	Similar to Option A. No significant effects.

ES.6 Public Involvement

Public engagement is essential in the NEPA process, helping to develop and identify key issues in an EA and making better-informed decisions. All public engagement and agency correspondence materials are included in Appendix B.

The Navy published a notice for public scoping for three days in the *Capital Gazette*, detailing the Proposed Action, the date and location of a public meeting hosted on NSA Annapolis, and soliciting comments. The public scoping meeting was held on June 12, 2024, in Annapolis, Maryland, where the Navy provided information on the Proposed Action and Alternatives and solicited public comments. All comments received during the scoping period, included in Appendix B, were considered in preparing the Draft EA.

The Navy also published a Notice of Availability for the Draft EA in the *Capital Gazette* for three days, announcing the Draft EA's availability for a 30-day public review and comment period, public meeting information, and where to review the Draft EA. The Navy held a public meeting on June 5, 2025, to discuss the environmental effects of the Proposed Action and alternatives and to receive comments on the Draft EA.

The Navy coordinated or consulted with other agencies as necessary, including but not limited to, the U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), Maryland Department of the Environment (MDE), Maryland Department of Natural Resources (MDNR), Maryland Historical Trust (MHT), and Maryland Department of Planning (Maryland State Clearinghouse). Appendix B includes a complete, up-to-date list of agencies consulted and copies of correspondence.

The Navy received comments from the federal and state agencies, the Chesapeake Bay Foundation (CBF), and from private citizens. All comments received during agency and public review were considered in preparing the Final EA.

ENVIRONMENTAL ASSESSMENT

Recreational Vehicle Park at

Naval Support Activity Annapolis

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Abbreviations and Acronyms

Acronym	Definition
ABA	Architectural Barriers Act
ADP	area development plan
APE	area of potential effect
AT/FP	Anti-terrorism and Force Protection
BGE	Baltimore Gas and Electric
BMP	best management practice
CBF	Chesapeake Bay Foundation
CCD	Coastal Consistency Determination
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CT	census tract
CZMA	Coastal Zone Management Act
dBA	A-weighted decibels
DC	District of Columbia
DoD	United States Department of Defense
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
ESC	erosion and sediment control
FEMA	Federal Emergency Management Agency
FIDS	forest interior dwelling species
GHG	greenhouse gas
HAP	hazardous air pollutants
ICRMP	Integrated Cultural Resources Management Plan
ICO	Installation Commanding Officer
IDP	Installation Development Plan
IPaC	Information for Planning and Consultation

Acronym	Definition
KOA	Kampground of America
kWh	kilowatt hour
Lmax	maximum A-weighted sound level
LOD	limit of disturbance
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MHT	Maryland Historical Trust
mph	miles per hour
MSL	mean sea level
MWR	Morale, Welfare, and Recreation
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAPS	Naval Academy Primary & Secondary
NAVFAC	Naval Facilities Engineering Systems Command
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSA	Naval Support Activity
NSWC	Naval Surface Warfare Center
OPNAVINST	Chief of Naval Operations Instruction
Plan 2040	Anne Arundel County Plan 2040
$PM_{2.5}$	fine particulate matter less than or equal to 2.5 micrometers in diameter

Acronym	Definition
PM_{10}	suspended particulate matter less than or equal to 10 micrometers in diameter
POL	petroleum, oil, and/or lubricants
RONA	Record of Non-Applicability
RV	Recreational Vehicle
SAV	submerged aquatic vegetation
SHPO	State Historic Preservation Officer
SO_2	sulphur dioxide
SO_x	sulphur oxides
SPCC	Spill Prevention, Control, and Countermeasure
tpy	tons per year
TMDL	Total Maximum Daily Loads
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
UFC	United Facilities Criteria
USFWS	U.S. Fish and Wildlife Service
USNA	United States Naval Academy
VOC	volatile organic compound
WWTP	wastewater treatment plant

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1 Purpose of and Need for the Proposed Action

1.1 Introduction

The Morale, Welfare, and Recreation (MWR) program proposes to construct a Recreational Vehicle (RV) Park at Naval Support Activity (NSA) Annapolis. MWR is a quality-of-life program that supports military readiness by providing a variety of convenient, accessible, and affordable support activities and services to the military community. This military community includes servicemembers, their families, civilian employees, military retirees, and other eligible participants. The MWR program:

Morale, Welfare, and Recreation (MWR) Program

The purpose of the Navy's MWR program is to contribute to the retention; readiness; and mental, physical, and emotional well-being of military personnel, and to the welfare of their families by providing a varied program of recreational, social, and community activities.

- supports the military community's physical, cultural, and social needs; and their general well-being;
- is an integral part of the military and benefits package;
- builds healthy families and communities through their support services;
- encourages positive individual values;
- aids in recruitment and retention of personnel; and
- provides support to the military community (DOD, 2009).

The proposed RV Park would include approximately 35–50 new concrete RV pads, utility connections, tent and primitive camping sites, a Comfort Station (including laundry, vending machines, Wi-Fi, and an enclosed dumpster and recycling pad), landscaping, and a new access road. At least four of the new concrete RV pads would meet the Architectural Barriers Act (ABA) Accessibility Standards. The exact infrastructure to be installed would be site-specific based on the requirements at the sites considered.

Commander, Navy Installations Command, NSA Annapolis, prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by Navy NEPA procedures.

1.2 Background

The three main areas of NSA Annapolis are the North Severn Complex, and the Upper and Lower Yards of the United States Naval Academy (USNA) (NAVFAC Washington, 2018a). The existing RV Park on the North Severn Complex is off Beach Road. It provides recreational camping opportunities for active-duty, retired, and reserve military and Department of Defense (DoD) employees and their families. There are 14 RV sites available all year, and 12 tent camping sites available from April 1 to October 31. Each RV site has water, electrical hook-ups, a charcoal grill, and a picnic table. A bathhouse and a central dump station are available to accommodate all 26 sites. The Commissary and Navy Exchange are within walking distance from the campground, and the USNA and downtown Annapolis are an approximate 5-minute drive.

Greenbury Point is also on the North Severn Complex. Greenbury Point is Navy-owned property mostly managed as a natural resources area; however, portions of Greenbury Point are open to mission-supported development. Greenbury Point contains about 255 acres of managed forest, the former Naval Radio Transmitting Facility, the Mill Creek Pier and Marina at Browns Cove, MWR program cottages (Cottages at Greenbury Point), the Greenbury Point Nature Center, a dog park, a few access roads, and walking trails. The trails and access roads are closed to the public when firearms ranges are operational and when training events preclude public access, which is indicated by a flashing red light and closed security gates.

1.3 Location

NSA Annapolis is in Anne Arundel County, Maryland, along the Severn River and Chesapeake Bay in Annapolis, approximately 30 miles southeast of Baltimore and 33 miles east of Washington, DC. The North Severn Complex is between the Severn River and Mill Creek at the confluence with the Chesapeake Bay (see Figure 1-1). Greenbury Point is on the eastern side of the North Severn Complex, across from Carr Creek and along Whitehall Bay (Figure 1-1).

1.4 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to construct an RV Park at NSA Annapolis. The proposed RV Park would include ABA-compliant features, modern campground facilities and RV hook-ups (specifically, size and infrastructure to accommodate newer, larger RVs), and tent and primitive camping sites. The Proposed Action is needed for four reasons:

1. **ABA Accessibility.** Eligible patrons do not have ABA-accessible, MWR program RV Park facilities in the Annapolis, Maryland area. The existing RV Park does not meet the ABA Accessibility Standards.
2. **Military Health.** The mental, physical, and emotional well-being of military personnel positively affects the way military personnel think and act and is crucial for military retention and readiness. The MWR program is tasked with continually identifying additional opportunities for promoting positive military mental and physical health.
3. **Capacity Demand.** The existing RV Park is not large enough to meet the demand for MWR program RV/camping facilities in the region.
4. **Infrastructure Demand.** The existing RV Park does not have adequate infrastructure to meet the demands of modern RVs.

ABA Accessibility

Passed as law in 1968, the ABA mandates that federal facilities are accessible for people with disabilities. The existing RV Park was constructed before the current ABA Accessibility Standards were established; thus, it does not meet the current standards, which typically include a paved driveway and pathway leading to an accessible restroom facility. Modifying the existing RV Park, including the existing bath house, to meet current ABA Accessibility Standards would significantly reduce the number of RV sites; currently, there are not enough RV sites to meet the existing demand. The Proposed Action would accommodate eligible patrons with disabilities.

Figure 1-1. North Severn Complex Location Map

Military Health

Research shows that physical, mental, and emotional well-being can be enhanced through outdoor recreational opportunities. Being in outdoor green spaces can reduce stress and promote physical activity (Avitt, 2021). In addition, feeling connected to other people is one protective measure that can help offset mental health risks (U.S. Department of Veterans Affairs, 2018).

Department of Defense Instruction 1015.10

Directs DoD components to establish military MWR programs to maintain individual, family, and mission readiness (DOD, 2009).

The MWR program is tasked with continually seeking additional leisure and support opportunities for military personnel and their families. Such opportunities are needed for military personnel to relax and connect socially to promote positive mental and physical health (DOD, 2021). The Proposed Action would offer an additional way for military personnel to connect socially in an outdoor green space; thus, it would promote military health.

Capacity Demand

The proposed RV Park is needed to assist in increasing the availability of MWR program opportunities in the area for service members, their families, and other eligible personnel. MWR would continue to use the existing RV Park and camping facility for RV patrons that do not require ABA accessibility and for RVs that do not require modern facility features. Both the existing RV Park and the proposed RV Park are needed to meet the demand for military campground facilities in the region, thereby allowing MWR to meet its mission to provide essential recreational programs for military personnel and their families. This, in turn, supports the Navy meeting the overall military mission.

In Fiscal Year 2023, there were 21 cancellations and 58 reserved nights that were lost due to facility issues, such as sites being out of order, lack of adequate size of the RV pad, or lack of suitable power amp hookups at the existing RV Park. During 2023, the existing RV Park had a waitlist (61 waitlisted customers) for the operational RV sites, demonstrating that additional capacity is needed to meet the demand (U.S. Navy, 2024). The closest commercial campground is the Washington DC/Capitol Kampground of America (KOA), approximately 13 miles away. The closest similar, non-commercial, MWR program/military campground is Camp Meade RV Park in Fort Meade, Maryland, approximately 23 miles away from the existing RV Park. Given these distances and traffic congestion in the DC metropolitan area, it is impractical for eligible patrons visiting Annapolis to stay at these campgrounds.

NSA Annapolis attracts more than a million visitors and tourists annually. RV camping is an affordable and popular method of leisure travel. The proposed RV Park would be an affordable option for military personnel, their families, civilian employees, military retirees, and other eligible participants during visits to NSA Annapolis.

Infrastructure Demand

The existing RV Park has inadequate infrastructure to meet the demands of modern RVs. At the existing RV Park, there is only one concrete pad that can support RVs longer than 35 feet, and the RV Park's roads are inadequate to support larger RVs. The existing RV Park is quite hilly with steep drop-offs that make it difficult to navigate larger RVs. The current RV Park also does not have room to add car pads to most of the sites. Based on industry trends, newer RVs and campers are larger and require more infrastructure to operate the new technology they contain. The utilities at the existing RV Park are also

old and in disrepair. The existing RV Park has 14 campsites with 20/30-amp electrical services. The lack of 50-amp electrical services leaves most modern vehicles underpowered and unable to use all RV electrical features concurrently. In Fiscal Year 2023, the RV Park had 58 reserved nights lost to sites being out of order and 21 cancellations due to facility issues (such as sites being out of order, the size of the RV pad, or lack of suitable power amp hookups). From October 2023 to August 2024, the RV Park had 44 reservation nights lost to sites being out of order, and 20 cancellations due to facility issues (U.S. Navy, 2024). Additionally, the existing RV Park has no sewer hookups. Gray water must be discharged at the dump station in the central region of the RV Park. A new RV Park is needed to provide patrons with larger concrete pads, easily accessible roads, and adequate utility infrastructure (electrical, water, and sewer) to meet the requirements of modern RVs.

1.5 Scope of Environmental Assessment

This EA includes an analysis of potential environmental effects associated with two action alternatives and the No Action Alternative. The environmental resource areas analyzed in this EA are air quality, water resources, geological resources, cultural resources, visual resources, biological resources, land use, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, and socioeconomics. The study area for each resource analyzed could differ due to how the Proposed Action interacts with or affects the resource. For instance, the study area for geological resources might only include the footprint of proposed ground disturbance, whereas the noise study area would expand out to include areas that could be affected by project operations, traffic, or construction activities.

1.6 Relevant Laws and Regulations

The Navy prepared this EA based on federal and state laws, statutes, regulations, policies, and Executive Orders (EOs) pertinent to this Proposed Action. Appendix A provides details of the relevant laws and regulations applicable to this EA. A description of the Proposed Action's consistency with these laws and regulations, and the names of regulatory agencies responsible for their implementation, is provided in Appendix A, Table A-2. As necessary, important laws and regulations may also be discussed within Chapter 3 of this EA.

1.7 Public and Agency Engagement and Intergovernmental Coordination

Public engagement is a critical part of the NEPA process. Public engagement aids in the development of the issues addressed in an EA, identification of important and unimportant issues related to a Proposed Action, and in making better informed decisions. All public engagement and agency correspondence materials are included in Appendix B.

The Navy published a notice for public scoping for three days in the *Capital Gazette*, which described the Proposed Action, provided a date and location for a public meeting, and solicited public comments. The public scoping meeting was held on June 12, 2024, in Annapolis, Maryland. At this meeting, the Navy provided information on the Proposed Action and alternatives, and solicited public comments. All comments received during the scoping period, which are summarized in Appendix B, were considered in preparing the Draft EA.

The Navy published a Notice of Availability for the Draft EA in the *Capital Gazette* for three days, which announced the availability of the Draft EA for public review and comment (including where to find a copy of the Draft EA), provided dates of the 30-day public comment period, and included information about the public meeting held on June 5, 2025. During the public meeting, the Navy received public

comments from a member of the general public and the Chesapeake Bay Foundation (CBF). All comments received at the public meeting and during the 30-day public comment period were considered when developing the final EA.

The Navy coordinated or consulted with agencies including but not limited to the U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), Maryland Department of the Environment (MDE), Maryland Department of Natural Resources (MDNR), Maryland Historical Trust (MHT), and Maryland Department of Planning (Maryland State Clearinghouse). In addition, a Federal Consistency Determination was submitted to MDE. Appendix B contains a complete, up-to-date list of agencies consulted and copies of correspondence.

The Navy sent a letter to MHT on May 16, 2025, to initiate Section 106 consultation on this Proposed Action. MHT concurred that the Proposed Action would have no adverse effect on historic properties at either of the Alternative locations.

The Draft EA was distributed to multiple state agencies through the Maryland State Clearinghouse. Maryland Department of General Services, Maryland Department of Transportation, and the Maryland Military Department did not have comments on the Draft EA.

MDE, through the Maryland State Clearinghouse, commented that the Proposed Action is generally consistent with its plans, programs, and objectives, with qualifying comments related to air quality requirements, soil contamination requirements, storage tank requirements, and solid waste requirements.

Through the clearinghouse, the Anne Arundel County Department of Public Works submitted a preference for Alternative 2 based on the distance from the water's edge, ability to accommodate more RV sites, and the opportunity to repurpose an existing building.

The Navy submitted a Federal Consistency Determination for this Proposed Action to the MDE Federal Consistency Coordinator, and the MDE provided a conditional concurrence with the determination findings in a letter dated July 14, 2025. For Alternative 1, mitigation for tree clearing and permanent buffer disturbance would be necessary. The conditional concurrence noted that the MDNR Forest Service requires review under the Forest Conservation Act for both action alternatives, and that tree mitigation as well as tree protection would be required for Alternative 1 and 2 as necessary.

The USFWS provided general comments to indicate its preference for the Alternative 2 location, and clarification that the acoustic bat surveys conducted on NSA Annapolis were not based on Service survey guidelines. The USFWS concurred with the Navy's finding of "not likely to adversely affect" the proposed endangered tricolored bat and the proposed threatened monarch butterfly, but noted that the Navy should request additional determination coordination should either species become listed under the Endangered Species Act.

The USEPA provided comments generally related to stormwater management controls, best management practices (BMPs) for wildlife effects, and vegetation management.

The CBF commented during the public meeting and submitted a comment letter. The organization provided a preference for Alternative 2 and asked that the Navy consider environmental site design that would minimize the impervious surface, preserve specimen trees, and minimize tree clearing. The CBF named concerns related to impervious surface and its effects on the Chesapeake Bay. They also noted that MDE is updating its stormwater regulations and programs to better assess impacts of more

frequent and intense storm events, and requested that the design of the RV Park include the larger capacity for stormwater management systems to be compliant with future stormwater regulations.

In addition to agency comments, the Navy received comments from four private citizens. These comments included concern about compliance with environmental regulations and construction at Greenbury Point, as well as concern about lighting under the Proposed Action and the dark sky initiative.

The Navy will remain in compliance with existing signed policies and statements as well as environmental regulations. NSA Annapolis is entirely within Maryland's Coastal Zone (MDE, 2024). Per the Memorandum of Understanding between the DoD and the State of Maryland (May 2013), the CZMA Coastal Consistency Determination (CCD) submission included consultation with MDNR, MDE, and other agencies such as the Critical Area Commission (State of Maryland and Department of Defense, 2013). Through the CCD consultation, effects to the coastal zone were considered. All comments received during the Draft EA review period were considered in preparing the Final EA; comments are included in Appendix B.

Many of the comments received during the public and agency engagement process were addressed through revisions to the EA to incorporate additional, clarifying information as requested. Other comments and concerns expressed will be addressed through continued coordination and consultation associated with the permitting process, such as a Stormwater Management Plan.

2 Proposed Action and Alternatives

2.1 Proposed Action

The MWR program proposes to construct a new RV Park at NSA Annapolis. The RV Park would include approximately 35–50 individual sites for RVs constructed to the current industry standards. Each individual RV site would consist of a concrete RV pad that would be approximately 40 feet by 20 feet with an adjacent car pad. These adjacent car pads would be approximately 9 feet by 20 feet. At least four RV sites would meet the ABA Accessibility Standards. Each RV site would have electrical service and freeze-proof hose and water and sewer connections. In addition, the RV Park would include tent and primitive camping sites. The RV Park would also provide a centrally located, ABA-accessible Comfort Station. This Comfort Station would include a laundry facility; family-style unisex cabana-style rooms that each hold a shower, sink, and toilet; vending machines; Wi-Fi; and an enclosed dumpster and recycling pad. Water, electrical (including 50-amp hook-up service), sewer infrastructure, and other utilities would be provided to the RV Park. The proposed Comfort Station and amenities would be for use only by RV Park patrons, and entry to facilities would be secured by keypads. Trash and recycling would be routinely serviced by a contractor. Natural surroundings, such as trees and shrubs, would be preserved to the maximum extent practicable, and additional trees would be planted.

The existing RV Park would continue to be used for RV patrons that do not require ABA accessibility, larger RV pads, or modernized facility features.

Recreational Vehicle Park

The proposed RV Park would assist in the goal of increasing the availability of MWR opportunities in the area for service members, their families, and other eligible personnel.

Photo source: NSA Annapolis

2.2 Screening Factors for Alternative Selection

The Navy's NEPA procedures recommend that the Navy use a screening process to identify a reasonable range of alternatives, including alternatives eliminated from consideration, where applicable. Only those alternatives determined to be reasonable and to meet the purpose and need (see Section 1.4) require detailed analysis.

Potential alternatives that meet the purpose and need were evaluated against the following screening factors:

1. The site should be large enough to accommodate the demand for 35–50 RV pads, an ABA-compliant Comfort Station, and associated facilities.
2. The site should have adjacent utilities and the ability to support permanent infrastructure for RV Park restroom and facilities.

Screening Criteria

The Navy's pre-planning process involves reaching a common understanding and consensus as to which requirements are essential to achieve the proposed action's purpose and need, known as the screening criteria, and what reasonable alternatives could achieve this purpose and avoid or minimize the potential for significant environmental effects. [OPNAV M-5090.1, Chapter 10 (U.S. Navy, 2021)]

3. Existing adjacent land uses should be compatible with a new RV Park to provide the desired RV Park setting: natural, quiet, and minimally developed.
4. The site should not adversely affect cultural resources.
5. The site should have easy access to an existing road.
6. The site should use previously disturbed areas, require minimal tree clearing, and avoid or minimize adverse effects on federal and state-listed rare, threatened, or endangered plant species and wetlands.

Various alternatives were evaluated against the screening factors. The alternatives considered include the following:

- taking no action (the No Action Alternative)
- constructing the RV Park on Greenbury Point at Possum Point (Alternative 1)
- constructing the RV Park on North Severn Complex at Beach Road (Alternative 2)
- expanding the existing RV Park
- constructing a new RV Park at Gage Road
- constructing a new RV Park adjacent to the nature center on Greenbury Point
- constructing a new RV Park on the Upper or Lower Yards
- constructing a new RV Park at the former Navy Exchange/Commissary parking lot on North Severn Complex

2.3 Alternatives Carried Forward for Analysis

Based on the screening factor evaluation, two reasonable action alternatives that meet the purpose and need were identified and will be carried forward for analysis in this EA: Greenbury Point at Possum Point (Alternative 1) and North Severn Complex at Beach Road (Alternative 2). Although the No Action Alternative would not meet the purpose and need, it is carried forward for analysis in this EA to establish a comparative baseline.

Figure 2-1 shows the location of the two action alternatives and the existing RV Park. Alternatives considered in the screening factor evaluation, but not carried forward for analysis, are briefly discussed in Section 2.4.

2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. Disabled eligible patrons who require ABA facilities would continue to be unable to access the NSA Annapolis RV Park. Eligible patrons—military patrons, their families, civilian employees, military retirees, and other eligible participants—would be limited to the existing non-ABA-compliant RV Park. Under the No Action Alternative, there would be no additional benefits to the mental and physical well-being of military personnel.

Figure 2-1. Action Alternatives and Existing RV Park Location

In addition, the existing RV Park only includes 14 RV sites and 12 tent camping sites, which does not meet the demand for recreational campsites for military personnel and their families in the region. Furthermore, the existing RV Park does not meet the infrastructure requirements for modern, larger RVs. Thus, the existing RV Park would continue to be used only for RVs that do not require larger pads and modernized infrastructure. The No Action Alternative would not meet the purpose of and need for the Proposed Action; however, the No Action Alternative is carried forward for analysis in this EA to establish a comparative baseline.

2.3.2 Alternative 1: Greenbury Point at Possum Point

Under Alternative 1, the Proposed Action would be implemented as described in Section 2.1 at the northern end of Greenbury Point (see Figure 2-2). Alternative 1 is adjacent to and east of Hooper High Road and includes a portion of Beach Circle (roadway). The Mill Creek shoreline and Mill Creek Marina are approximately 100 feet away from Alternative 1's northern site boundary, and the Whitehall Bay shoreline is approximately 100 feet away from the eastern site boundary. Alternative 1 is on an elevated parcel of land that previously contained three Bachelor's Enlisted Quarters, which were demolished in 2010.

Based on the size of the proposed Alternative 1 site, approximately 35 individual RV sites (concrete RV pad with adjacent car pad) and tent and primitive campsites would be constructed. At least four of these RV sites would be ABA-compliant. An ABA-compliant Comfort Station would also be constructed, as detailed in Section 2.1. Utilities would connect to the site, including water, wastewater, stormwater, and electrical utility lines. A trench or directional bore would be created for an internet line. A pedestrian walkway/drive aisle would likely connect the campsites and facilities to Hooper High Road. Figure 2-2 shows the location and approximate boundaries of Alternative 1.

During the alternative development process, environmental constraints were determined and avoided, including those present near the Alternative 1 site, to estimate site boundaries. At Alternative 1, these constraints include:

- avoiding a 100-foot riparian buffer,
- avoiding nearby walking trails, and
- avoiding wetlands and associated buffers.

While Alternative 1 could only support approximately 35 RV sites to avoid environmental constraints, the setting of the site (natural, quiet, and minimally developed; screening factor 3) provides a desirable location for RV Park patrons.

Existing public and military access and use of Possum Point and the Mill Creek Marina would be maintained and would not be impeded under this alternative. In addition, the alternative would not impact Midshipmen training that occurs on Greenbury Point.

Under Alternative 1, the limit of disturbance (LOD) would be approximately 3.25 acres, with approximately 1 acre of new impervious surface. Most of the site has grass and trees along the edges, which would be preserved to the maximum extent practicable; however, up to 0.5 acres of trees could be cleared along the southern boundary of the site, depending on final site designs.

Figure 2-2. Alternative 1 Location

Alternative 1 meets the project's purpose and need and all screening factors. During scoping, the public expressed concern about the previous site boundary's proximity to the shoreline; thus, the Navy adjusted the site boundary (as shown in Figure 2-2) to be as far from the shoreline as possible without affecting other environmental resources (i.e. wetlands, cultural resources, trees).

Alternative 1 is the Navy's Preferred Alternative for implementing the Proposed Action.

2.3.3 Alternative 2: North Severn Complex at Beach Road

Under Alternative 2, the Proposed Action would occur as described in Section 2.1 at the North Severn Complex at Beach Road, just southwest of Kinkaid Road (see Figure 2-3). Alternative 2 is adjacent to the existing RV Park (Figure 2-1) and is 1,109 feet (0.21 miles) from the Severn River. The Alternative 2 site includes an existing grass softball field to the south and a forested area on the northeast portion. An installation support building, the Retelle Building, is on the southwest portion adjacent to the softball field. The Retelle Building was constructed in 1946 and is the only structure under Navy ownership that remains out of 96 buildings and other structures of the former Naval Surface Warfare Center (NSWC).

Under Alternative 2, approximately 35–50 individual RV sites (concrete RV pad with adjacent car pad) and tent and primitive campsites would be constructed and dispersed evenly on the site. A proposed access road would connect the site to Beach Road. Utilities that would connect to the site include water, wastewater, stormwater, electrical, and internet lines. Due to the steep slopes and uneven terrain of the Alternative 2 site, extensive clearing and grading would be required for development, particularly beyond the relatively flat area of the softball field. Trees would be preserved to the maximum extent practicable, but up to 1.9 acres of trees may need to be cleared due to site grading requirements.

The area around the Alternative 2 site has fewer environmental constraints than the Alternative 1 site; therefore, this site is larger and could accommodate more RVs—up to 50 individual RV sites depending on final site designs. However, the site is more developed, and the setting is not as desirable for RV Park patrons as the Alternative 1 location. The Navy determined that with this balance of accommodation (number of sites that could be provided and the overall setting of the RV Park), this alternative meets the purpose and need and screening factors.

Under Alternative 2, the Proposed Action could be implemented with one of the following two options:

Option A. A new building would be constructed within the Alternative 2 site for the ABA-compliant Comfort Station. The Retelle Building would remain on the site. Under this option, the LOD of Alternative 2 would be approximately 4.5 acres, and there would be 1.35 acres of new impervious surface.

Option B. The Retelle Building would be renovated for use as the ABA-compliant Comfort Station (Figure 2-3). The Retelle Building is currently used for recreational purposes. Under this option, the LOD of Alternative 2 would be approximately 4.5 acres. Option B would result in 1.30 acres of impervious surface (0.05 acres less than Option A) due to the reuse of the Retelle Building.

Alternative 2, Options A and B, meet the purpose and need discussed in Section 1.4 and all of the screening factors listed in Section 2.2.

Figure 2-3. Alternative 2 Location

2.4 Alternatives Considered but Not Carried Forward for Detailed Analysis

The Navy considered five alternatives that are not carried forward for detailed analysis; these are described as follows and shown in Figure 2-4.

2.4.1 Expand the Existing RV Park

The existing RV Park has limited suitable space to add additional RV sites due to steep slopes near the Severn River's edge and Woolchurch Pond, uneven topography, dense tree cover, Woolchurch Pond, and associated wetlands (see Figure 2-5). The area to the northeast has steep slopes that would require extensive tree clearing and grading (ground disturbance) to accommodate additional RV pads. The area to the south is heavily wooded and sloped, which would require extensive tree clearing to grade the area to accommodate RV sites and roadways.

The 6.78-acre Woolchurch Pond and associated wetlands are immediately adjacent to the steep incline. Expansion that could occur west of the existing RV Park and closer to Woolchurch Pond would be limited, as there are slopes beyond the immediate vicinity. An archaeological site eligible for the National Register of Historic Places (NRHP) is within this area of consideration and would have to be avoided. These features prevent development and expansion to the north and east of the existing RV Park and allow for limited development to the west.

While expanding the existing RV Park site would solve some of the requirements (i.e., utilities upgrades), only an estimated four RV sites could be added due to the size of the developable area. As previously discussed, industry trends indicate that newer RVs are larger; therefore, the expanded site would only accommodate a few of these larger RVs. This minimal expansion would not meet the demand for recreational campsites for eligible patrons in the region. The existing RV Park had a waitlist each month from March through October in fiscal year 2023, and an additional four RV sites would not alleviate the trends in reservations and waitlists that the MWR has experienced. In fiscal year 2023, the RV Park lost almost 80 reservation nights due to sites being out of order or cancellations due to lack of facilities (such as size of the RV pad or the amp hookup) (U.S. Navy, 2024).

This alternative does not meet the purpose and need or screening factors 1, 4, or 6; therefore, it is not carried forward for further analysis in this EA.

2.4.2 Construction of a New RV Park at Gage Road

Under this alternative, a new RV Park would be constructed on the North Severn Complex at a location near Gage Road and Bennion Road. The LOD would be approximately 3 acres. This area has very steep slopes that would require a lot of earth disturbance and grading and is mostly covered with trees, which would need to be removed. Depending on the amount of grading that would need to occur, approximately 1 to 2 acres of trees would need to be cleared to construct the RV Park at this location. In addition, this site is surrounded by military housing (single-family homes and apartments) to the northwest and northeast, and installation facilities to the south. The surrounding land uses are not compatible with natural green spaces desired at campgrounds. Research shows that outdoor green spaces can reduce stress and promote physical activity (benefiting military health) (Avitt, 2021). The adjacent residential homes would be affected by the removal of trees and natural cover, which would be replaced with the new RV Park. This alternative does not meet screening factors 3 and 6; therefore, it is not carried forward for further analysis in this EA.

Figure 2-4. Location Map of Alternatives Considered but Dismissed and Alternatives Carried Forward for Analysis

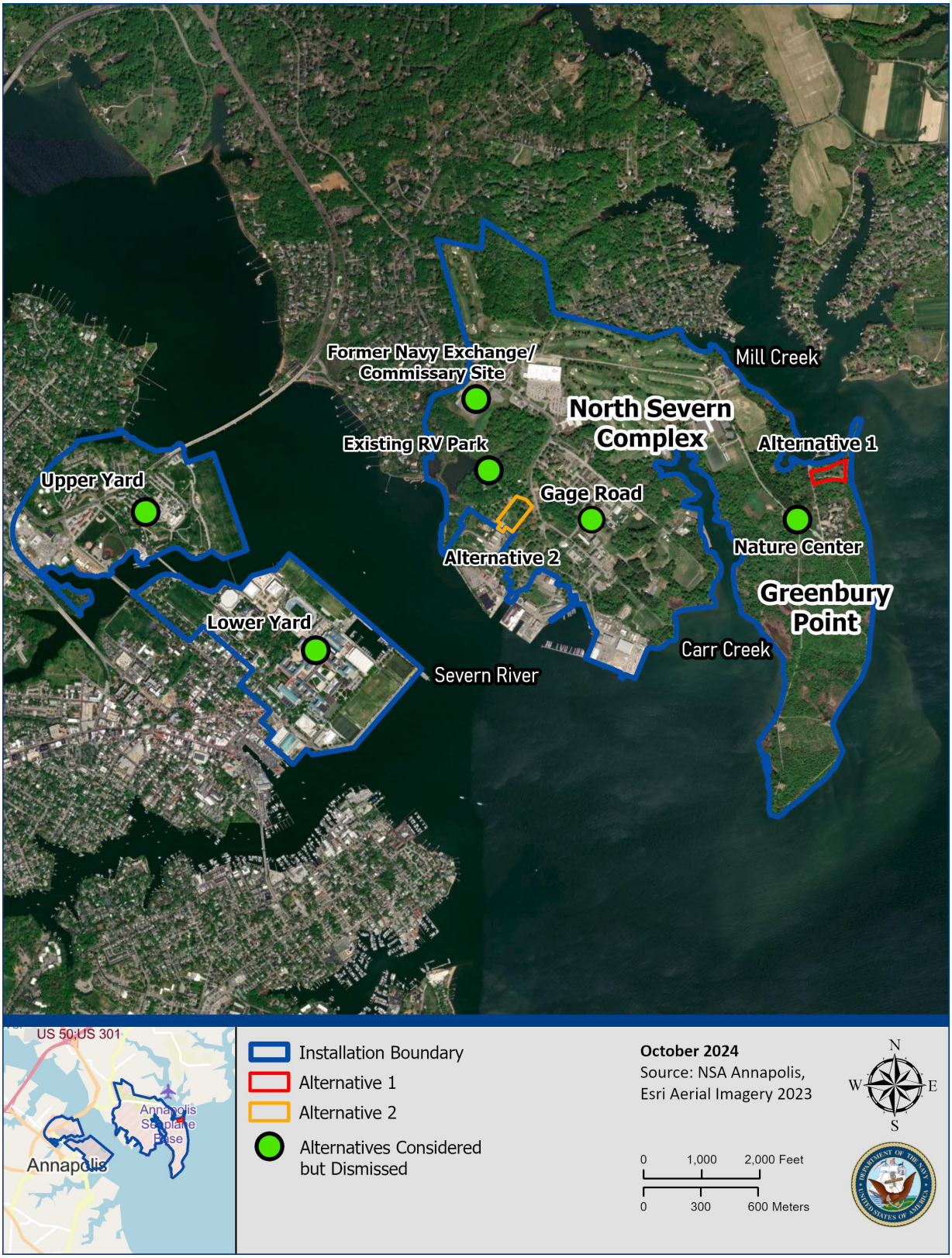
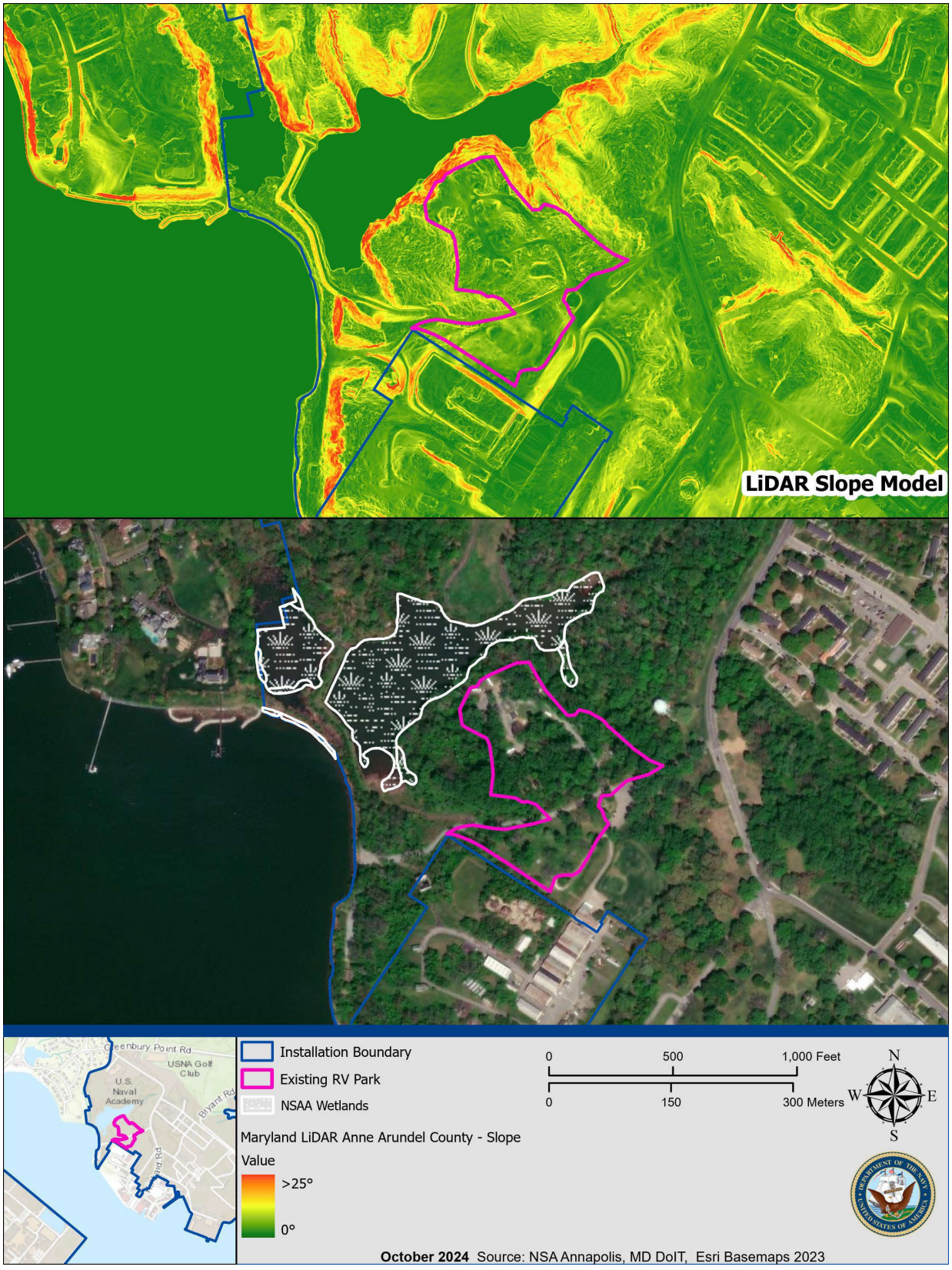


Figure 2-5. Existing RV Park showing Topography, Wetlands, and Tree Cover



2.4.3 Construction of a New RV Park adjacent to the Nature Center on Greenbury Point

Under this alternative, a new RV Park would be constructed adjacent to the nature center on Greenbury Point. The LOD would be approximately 3 acres. While the size of the site could accommodate the new RV Park, this site contains wetlands and an area with milkweed plants that are beneficial to the monarch butterfly, which is proposed for listing under the Endangered Species Act. This site also contains Carolina milkvine or anglepod (*Matelea carolinensis*), which is a state threatened plant species ranked as rare-to-vulnerable in the state (S2S3) (Maryland DNR, 2021; NAVFAC Washington, 2018a). In addition, there is a cultural resources site near the area that has not been evaluated for the NRHP. A Phase II archaeological survey would be required to evaluate its significance and determine its eligibility for listing in the NRHP. This alternative does not meet screening factors 4 and 6. Given the potential adverse effects on natural and cultural resources, this alternative is not carried forward for further analysis in this EA.

2.4.4 Construction of a New RV Park on the Upper or Lower Yards

Under this alternative, approximately 3 acres of land would be modified to accommodate a new RV Park. Constructing a new RV Park on the Upper Yard or Lower Yard would result in an increase in RV traffic on narrow roadways that already have a lot of traffic and are not designed for larger RVs. Some of the historic Upper and Lower Yard roads are narrow with short turning radii, which would be difficult for RVs to maneuver. The Upper and Lower Yards are highly developed and do not have the natural green spaces that are desired at campgrounds. Most of the undeveloped land in the Upper and Lower Yards is used for USNA student activities, such as athletics or military training. Land in this area of the installation is generally not compatible with the recreational land use of a new RV Park. Much of the Upper Yard and the entirety of the Lower Yard is designated as a National Historic Landmark. There are approximately 200 buildings and structures that define the USNA's historic significance. In addition, numerous landscape features also contribute to its significance such as lawns, vistas, sidewalks, and roads. Adding an RV Park to either the Upper or Lower Yards is not compatible to the historic sense of place and would diminish the integrity of the historic district. This alternative does not meet screening factors 3 or 4; therefore, it is not carried forward for further analysis in this EA.

2.4.5 Construction of a New RV Park on the Former Navy Exchange/Commissary Parking Lot on North Severn Complex

Under this alternative, the former Navy Exchange/Commissary parking lot would be used to construct the RV Park at this site. This approximately 2.3-acre site is about 250 feet west of off-base residential housing. The site is close to Kinkaid Road, and approximately 500 feet from the current Navy Exchange/Commissary and parking lot. These surrounding land uses are not compatible with natural green spaces desired at campgrounds and the site itself consists mostly of pavement and buildings. Research shows that outdoor green spaces can reduce stress and promote physical activity (benefitting military health) (Avitt, 2021). In addition, the Navy Exchange/Commissary parking lot contains landfill vent pipes. Open flames are not allowed within 50 feet of these landfill vent pipes. Thus, this alternative site is not compatible with use of the site as an RV Park with campfires. Development of this site for a new RV Park also conflicts with future plans to upgrade the existing facility to house NSA Annapolis Security Forces, which would require parking. This alternative does not meet screening factors 1 and 3; therefore, it is not carried forward for further analysis in this EA.

2.5 Best Management Practices Included in Proposed Action

This section presents an overview of the best management practices (BMPs) that are incorporated into the Proposed Action. BMPs are existing policies, practices, and measures that the Navy would adopt to the maximum extent practicable to reduce the environmental effects of designated activities, functions, or processes. Although BMPs mitigate potential adverse effects by avoiding, minimizing, or reducing/eliminating effects, BMPs are distinguished from potential mitigation measures because BMPs are (1) existing requirements for the Proposed Action; (2) ongoing, regularly occurring practices; or (3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. Table 2-1 includes a list of BMPs. Mitigation measures, if applicable, will be discussed separately in Chapter 3.

Table 2-1 Best Management Practices

BMP	***Description***	***Effects Reduced/Avoided***
Erosion and Sediment Control (ESC) Plan	A plan that describes ESC measures for projects involving earth disturbance of ≥ 5,000 square feet or 100 cubic yards.	Reduce and control erosion and sediment.
NPDES General or Individual Permit for Stormwater Associated with Construction Activity	A permit that is required when disturbance of one acre or more occurs.	Reduce discharges into waters of the United States.
Fugitive dust practices	Examples of measures include wetting soil, covering soil stockpiles, and ceasing operations during high winds.	Control fugitive dust emissions.
Construction equipment	Good housekeeping measures for construction equipment (i.e., petroleum, oil, and/or lubricants [POL]) for optimal performance. Maintaining construction equipment according to the manufacturer's specifications and placing drip mats under parked equipment as needed.	Prevent leaching of contaminants into groundwater and surface water.
Stormwater Management Plan	A plan that addresses stormwater management and adheres to the Energy Independence and Security Act Section 438 and the Navy Low Impact Development Policy.	Reduce stormwater runoff to protect water and biological resources.
Light pollution minimization	Minimization measures include lighting shields, "warmer" tone LED lighting, and keeping lighting low to the ground. USFWS and DarkSky International lighting resources would be used for design considerations during the site design process.	Reduce visual resources effects and reduce effects on bats, birds, and other wildlife.

Key: NPDES = National Pollutant Discharge Elimination System; USFWS = U.S. Fish and Wildlife Service

3 Affected Environment and Environmental Consequences

The affected environment sections within this chapter describe the existing environmental conditions for those relevant resource areas affected by the alternatives. This includes reasonably foreseeable environmental trends and planned actions in the area. The affected environment discussion informs the environmental consequences analysis and mitigation measures, if required. The environmental consequences sections within this chapter include a discussion of the reasonably foreseeable direct and indirect environmental effects of implementing the alternatives on the relevant resource areas.

Direct and Indirect Effects

Direct effects "result from an action and occur at the same time and place as the action."

Indirect effects "also result from the action, but occur later in time or at a removed location from the action, and are reasonably foreseeable." [OPNAV M-5090.1 (U.S. Navy, 2021)]

The word, "significantly," as used in NEPA, requires consideration to both context and intensity. Context means that the significance of a proposed action must be analyzed in several contexts such as society (e.g., human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world. Both short- and long-term effects are relevant. Intensity refers to the severity or extent of the potential environmental effect, which can be thought of in terms of the potential amount of the likely change. Significant effects are determined by examining the intensity in relation to the sensitivity of the context. More sensitive contexts would be more susceptible to significant effects, even from less intensity.

To narrow the scope of the environmental review, enhance efficiency, and produce concise environmental documents, the Navy clarifies the environmental issues to be analyzed and those that have negligible, nonexistent, or minimal effects. Environmental resources deemed not likely to result in potential environmental effects, or negligible effects, must be only briefly discussed. For this EA, the following resource areas were evaluated in detail for potential significant effects:

- air quality
- water resources
- geological resources
- cultural resources
- visual resources
- biological resources
- land use
- noise
- infrastructure
- transportation
- public health and safety

All potentially relevant environmental resource areas were initially considered for analysis in this EA. Potential environmental effects on two resource areas were determined to be negligible, minimal, or nonexistent. Thus, in compliance with Navy procedures, this EA focuses only on those relevant resource areas potentially subject to environmental effects, and the level of detail used in describing a resource area is commensurate with the anticipated level of potential environmental effect. The following summarizes those resource areas not analyzed in detail and the basis for this conclusion:

Hazardous Materials and Waste: Hazardous materials used and stored on the installation include batteries, cleaning solutions, lubricants, pesticides, herbicides, and other miscellaneous waste. Construction equipment would use small quantities of hazardous materials and petroleum products (e.g., solvents, hydraulic fluid, oil, antifreeze, and other hazardous materials). Construction contractors

would ensure the handling and storage of hazardous materials are carried out in compliance with applicable laws and regulations. Should hazardous materials be released into the environment, applicable management plans, such as the installation's Spill Prevention, Control, and Countermeasure (SPCC) Plan, would be followed. BMPs would reduce the potential for accidental release of hazardous materials. BMPs include maintaining construction equipment according to the manufacturer's specifications and placing drip mats under parked equipment as needed. Hazardous waste would be handled and disposed of in accordance with federal, state, and local regulations. New construction would not likely include the use of toxic substances because federal policies and laws limit their use in building construction. Operation and maintenance of the proposed infrastructure would result in negligible amounts of hazardous materials such as paints, adhesives, solvents, and cleansers. Any pesticides or fertilizers used at the new RV Park would be handled in accordance with the NSA Annapolis Integrated Pest Management Plan. Thus, construction and operation activities would result in direct, short- and long-term, negligible, environmental effects from the potential human or wildlife exposure to hazardous materials and waste. This direct effect of hazardous materials and waste is therefore not analyzed further. However, the indirect, short- and long-term effects from hazardous materials and waste on water resources and biological resources are analyzed in further detail (see Sections 3.2 and 3.6).

Although unlikely, if contaminated soil was discovered during construction, the Navy would sample the soil and screen against the MDE action levels for the identified contaminant. If the action level is exceeded, the contaminated soil would then be removed by workers wearing appropriate personal protective equipment and properly disposed of in accordance with federal, state, and local regulations.

Structures built before 1989, the year the USEPA restricted the use of asbestos-containing materials, could contain asbestos. Similarly, lead-based paint could be found in structures built before 1978, the year the use of lead-based paint was banned. The Retelle Building, which is proposed for renovation under Alternative 2 (Option B), was constructed in 1946 (NAVFAC Washington, 2018a). Prior to renovation of the building, the Navy would determine if these hazardous materials were present. If asbestos-containing materials or lead-based paint were found to be present during renovation, those materials would be handled and disposed of in accordance with applicable federal and state regulations. Solid waste management is discussed in Section 3.9, Infrastructure.

Socioeconomics: The Proposed Action would not alter the number of personnel employed or stationed at NSA Annapolis, as existing personnel would operate the RV Park. Therefore, there would be no effects on the installation population or public service including demand for housing, education, law enforcement, fire protection, or medical services. The Proposed Action would result in short-term, minor expenditures from construction activities, which could benefit local or regional employment and the economy during the duration of such activities.

The Proposed Action would be open to the same eligible users as the existing RV Park. The proposed facility would include both RV sites and tent/primitive camping sites to accommodate a range of recreational camping preferences. Implementation of the Proposed Action would not change the existing level of access to nearby trails and scenic viewpoints available to RV Park guests, the public, and Navy personnel and Midshipmen.

There would be no change to the number of personnel, no change in access to nearby recreational opportunities, and the RV Park would serve both RV-owners and non-RV-owners. The short-term benefits to the community and economy from construction activities would be temporary. RV Park

patrons would spend money in the local area, which could benefit the local economy and result in long-term, negligible, indirect expenditures from the RV Park operations. Therefore, socioeconomics is not analyzed in further detail.

3.1 Air Quality

This air quality discussion includes criteria pollutants, hazardous air pollutants (HAPs), standards, sources, permitting, and greenhouse gases (GHGs). Air quality in a location is defined by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors, including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Most air pollutants originate from human-made sources, including mobile sources (e.g., cars, trucks, buses), stationary sources (e.g., factories, refineries, power plants), and indoor sources (e.g., some building materials and cleaning solvents).

3.1.1 Affected Environment

Under the Clean Air Act, the USEPA established National Ambient Air Quality Standards (NAAQS) for air pollutants (40 Code of Federal Regulations [CFR] part 50). Criteria pollutants include carbon monoxide (CO), sulfur dioxide (SO_2), sulfur oxides (SO_x), nitrogen oxides (NO_x), ozone, volatile organic compounds (VOCs), suspended particulate matter less than or equal to 10 micrometers in diameter (PM_{10}), and fine particulate matter less than or equal to 2.5 micrometers in diameter ($PM_{2.5}$). HAPs, also known as toxic air pollutants, are pollutants known to cause serious health effects to humans and include lead, asbestos, benzene, mercury, and many others. Areas that violate a federal air quality standard are designated as nonattainment areas. State Implementation Plans are prepared to identify the measures by which that area will achieve attainment. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment. A detailed discussion of the regulatory setting applicable to air quality is in Appendix A of this EA.

The alternative sites are located in Anne Arundel County, which is within the Metropolitan Baltimore Intrastate Air Quality Control Region (40 CFR 81.28). MDE is responsible for implementing and enforcing state and federal air quality regulations in Maryland. Anne Arundel County is designated as a serious nonattainment area for the 2015 eight-hour ozone standard (USEPA, 2023a). A portion of Anne Arundel County, which includes the alternative sites, is also in nonattainment for SO_2 under the 2010 standard. Anne Arundel County was formerly classified as a maintenance area for the 1997 $PM_{2.5}$ standard, but this standard was revoked in 2016. Table 3-1 shows the Anne Arundel County criteria and HAP emissions inventory. These inventories are published every three years by the USEPA and provide a characterization of the existing air quality at the county and regional levels that provide context for assessing the air quality effects from the proposed action.

The alternative sites are within an ozone transport region, which means that regional urban influences from well outside Annapolis and the Metropolitan Baltimore Intrastate Air Quality Control Region also contribute substantially to local ozone pollution. The ozone transport region was established by the 1990 Clean Air Act Amendments. NO_x and VOCs are considered precursors of ozone and are regulated accordingly. Because Anne Arundel County is in serious nonattainment for ozone and nonattainment for SO_2, a General Conformity Applicability Analysis is required as part of this EA. *De minimis* threshold levels are 50 tons/year for VOCs, 50 tons/year for NO_x, and 100 tons/year for SO_2. *De minimis* threshold

levels are, "the minimum threshold for which a conformity determination must be performed" (USEPA, 2023c).

Table 3-1 Anne Arundel County Criteria Pollutants and HAP Emissions Inventory (2020)

Location	*NO_x (tpy)*	*VOC (tpy)*	*CO (tpy)*	*SO_2 (tpy)*	*PM_{10} (tpy)*	*$PM_{2.5}$ (tpy)*	*Total HAP (tpy)*
Anne Arundel County	7,961	18,084	50,014	2,285	4,318	1,891	2,305
Metropolitan Baltimore Intrastate Air Quality Control Region	33,145	80,611	212,480	5,513	25,262	9,395	17,806

Source: (USEPA, 2023b)
Note: The Metropolitan Baltimore Intrastate Air Quality Control Region includes Anne Arundel, Baltimore, Carroll, Harford, and Howard counties; and Baltimore City.
Key: NO_x = nitrogen oxides; VOC = volatile organic compound; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; HAP = hazardous air pollutant (including lead); tpy = tons per year.

A General Conformity determination is a regulatory process under the USEPA that ensures federal actions are consistent with the goals of maintaining or improving air quality. This determination is required for any federal project or activity in areas that do not meet NAAQS. The process involves evaluating whether the emissions from the federal action will conform to the state or local air quality management plans. If a federal action's emissions are below certain *de minimis* thresholds, it may be exempt from further analysis. However, if the emissions are equal to or exceed these thresholds, a more detailed assessment is required to ensure that the federal action would not worsen air quality or delay the attainment of air quality standards. This process is important for protecting public health and the environment from the potential adverse air quality effects of federal projects.

USNA at NSA Annapolis operates under Title V permit no. 24-003-00310 that includes a central heating plant, portable boilers, water heaters, a spray paint booth, and emergency generators for the Upper and Lower Yards (MDE, 2019). Table 3-2 shows the most recent annual criteria pollutant and HAP emissions reported under the Title V permit for USNA. At North Severn Complex, NSA Annapolis operates several stationary emission sources under a state operating permit from MDE. These sources include natural gas-fired boilers and heaters, oil furnaces, backup generators, and painting booths (NAVFAC Washington, 2023).

Table 3-2 Upper and Lower Yards Criteria Pollutants and HAP Emissions Inventory

Year	*NO_x (tpy)*	*VOC (tpy)*	*CO (tpy)*	*SO_x (tpy)*	*PM_{10} (tpy)*	*$PM_{2.5}$ (tpy)*	*Total HAP (tpy)*
2023	10.44	0.83	12.98	0.09	0.30	0.30	0.016387

Sources: (NSA Annapolis, 2023b)
Key: NO_x = nitrogen oxides; VOC = volatile organic compound; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; HAP = hazardous air pollutant (including lead); tpy = tons per year.

In addition to criteria pollutants, GHG emissions are quantified and reported annually under the Title V permit requirements, which are limited to the Lower and Upper Yards. Table 3-3 presents the most recent GHG emissions inventory for Anne Arundel County. Table 3-4 shows recent GHG emissions for USNA.

Table 3-3 Anne Arundel County GHG Emissions Inventory (2020)

Location	*CO_2e from CO_2 (tpy)*	*CO_2e from CH_4 (tpy)*	*CO_2e from N_2O (tpy)*	*Total CO_2e (tpy)*
Anne Arundel County	4,772,836	109,879	28,933	4,911,648
Metropolitan Baltimore Intrastate Air Quality Control Region	19,348,194	377,699	85,695	19,811,591

Source: (USEPA, 2023b)
Notes: The Metropolitan Baltimore Intrastate Air Quality Control Region includes Anne Arundel, Baltimore, Carroll, Harford, and Howard counties; and Baltimore City. Conversion factors for CO_2e are different for each greenhouse gas. GHG Conversion Factors: CO_2 = 1, CH_4 = 25, and N_2O = 298.
Key: CO_2e = carbon dioxide equivalents; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; tpy = tons per year.

Table 3-4 Lower and Upper Yards GHG Emissions Summaries

Year	*CO_2e from CO_2 (tpy)*	*CO_2e from CH_4 (tpy)*	*CO_2e from N_2O (tpy)*	*Total CO_2e (tpy)*
2023	16,865.52	0.37	0.31	16,866.2

Sources: (NSA Annapolis, 2023b)
Note: CO_2 = 1, CH_4 = 25, and N_2O = 298.
Key: CO_2e = carbon dioxide equivalents; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; tpy = tons per year.

Children, elderly people, and people with illnesses are especially sensitive to the effects of air pollutants. Therefore, hospitals, schools, and residential areas are considered especially sensitive to air quality effects. Table 3-5 lists sensitive receptors located near the alternative sites.

Table 3-5 Sensitive Receptors Near Alternative 1 and Alternative 2

Sensitive Receptors	*Proximity to Alternative 1 or Alternative 2*
Cottages at Greenbury Point	Approximately 500 feet from Alternative 1
Recreational walking trails	On Greenbury Point, near Alternative 1
Residences located off Kinkaid Road	Approximately 600 feet from Alternative 2
Naval Academy Primary & Secondary school*	0.4 miles from Alternative 1 0.8 miles from Alternative 2
Annapolis Child Development Centers	0.2 miles from Alternative 2
Billy the Kid Youth Center*	0.3 miles from Alternative 2
Naval Health Clinic*	0.3 miles from Alternative 2

* According to the USEPA's online mapping tool NEPAssist

3.1.2 Environmental Consequences

This section analyzes potential air quality effects caused by the Proposed Action. Adverse effects on air quality would be considered significant if the Proposed Action caused pollutant concentrations to exceed any of the NAAQS.

3.1.2.1 No Action Alternative

Under the No Action Alternative, there would be no increases in criteria pollutants or GHG emissions associated with construction or operation of a new RV Park. There would be no effects on baseline emissions, general conformity, or overall air quality at NSA Annapolis or within the surrounding communities. Therefore, there would be no significant air quality effects under the No Action Alternative.

3.1.2.2 Alternative 1 Potential Effects

Under Alternative 1, air quality effects during construction activities would occur. Criteria pollutants and GHGs would be emitted during vehicle trips of construction workers, vendors, and materials delivery. Vehicle emissions and fugitive (dust) emissions from construction equipment operations at the site would also occur. Construction activities generating vehicle and fugitive emissions would include site clearing and grading; utilities trenching and installation; construction of approximately 35 concrete RV pads and adjacent car pads; construction of the Comfort Station, pedestrian walkways, and drive isle within the RV Park; and tree planting/general landscaping. These additional construction emissions and their effects on air quality would persist for the duration of the construction, which was estimated to be approximately six months for the emissions modeling. When viewed from the context of local and regional emissions (Table 3-1 and Table 3-3), these additional emissions would be minimal and would only represent a fraction of a percent of existing emission levels. Thus, there would be short-term, minor effects on local and regional air quality resulting from construction activities under Alternative 1. Table 3-6 shows the estimated criteria pollutants and GHG emissions for construction activities under Alternative 1. All construction work would take reasonable precaution to prevent particulate matter, such as fugitive dust, from becoming airborne, in conformance with state regulation COMAR 26.11.06.03D.

Under Alternative 1, air quality effects during the operation of the RV Park would occur. Operational air emissions would fluctuate between peak and non-peak RV season but would persist on a yearly basis. Historical use data for the existing RV Park indicate an estimated 46 yearly patrons per RV site and similar use is expected for the new RV Park (NSA Annapolis, 2014). Estimates for additional RV Park patrons and associated emissions reasonably expected under Alternative 1 include 1,610 additional patrons for the 35 new RV sites. These additional patrons could travel an average round trip distance of 100 miles, with 50 percent of patrons towing a secondary light vehicle and traveling an average of 25 miles during their stay. No long-term operational emissions would be expected from generator usage at the RV Park as adequate electrical service would be included at each RV site. Electrical heating would be used at the proposed Comfort Station. There would be no operational emissions associated with onsite natural gas. Operational emissions under Alterative 1 would include long-term, minor increases in criteria pollutants and GHGs associated with an increase in vehicle trips to the RV Park. These emissions would be well below *de minimis* levels and would represent only a small fraction of existing air pollutants at the regional level. Table 3-6 shows the estimated yearly operational emissions for criteria pollutants and GHGs under Alternative 1.

Summary

Under Alternative 1, construction would cause short-term, minor air quality effects, and the RV Park operations would cause long-term, minor air quality effects. The emissions would be below *de minimis* thresholds; there would be no significant air quality effects. Thus, Alternative 1 is exempt from further analysis under the General Conformity Rule (see further details in the below Section 3.1.2.4, General Conformity Applicability Analyses and in Appendix C).

Table 3-6 Alternative 1 Criteria Pollutants and GHG Emissions from Construction and Operations

Construction Emissions	***VOC***	***SO_x***	***NO_x***	***CO***	***PM_{10}***	***$PM_{2.5}$***	***CO_2e***
Non-Road	0.04	0.0008	0.24	0.29	0.01	0.01	74.47
On-Road	0.01	0.0001	0.03	0.09	0.00	0.00	22.85
Fugitive	0.04	-	-	-	0.22	0.00	-
Construction Total	0.08	0.0009	0.28	0.38	0.23	0.01	97.32
Operational Emissions							
On-Road (RV Patron Trips)	0.09	0.0009	0.32	1.48	0.01	0.01	200.65
Emergency Generator	-	-	-	-	-	-	-
Natural Gas Combustion	-	-	-	-	-	-	-
Operational Total	0.09	0.0009	0.32	1.48	0.01	0.01	200.65
Alternative 1 Totals	***0.18***	***0.0018***	***0.59***	***1.86***	***0.23***	***0.02***	***297.97***
De minimis threshold	***50***	***100***	***50***	***-***	***-***	***-***	***-***

Source (ACAM v5.0.23a)

Key: NO_x = nitrogen oxides; VOC = volatile organic compound; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; CO_2e = carbon dioxide equivalents.

Note: Emissions might not add up precisely due to rounding.

3.1.2.3 Alternative 2 Potential Effects

Overall, estimated construction emissions for criteria pollutants and GHGs under this alternative would be greater than those for Alternative 1. This is due to the larger site size and greater construction effort required for up to 50 RV sites, as opposed to 35 for Alternative 1. Also, more site grading and preparation would be required due to the sloped terrain. These effects on air quality would be minor and temporary, lasting the duration of the construction, which was estimated to be approximately six months for the emissions modeling. All construction work would take reasonable precaution to prevent particulate matter, such as fugitive dust, from becoming airborne, in conformance with state regulation COMAR 26.11.06.03D.

Operational emissions for Alternative 2 would also be greater than those expected under Alternative 1, due to increased patronage and associated vehicles traveling to the larger RV Park. Operational emissions for Alternative 2 would be minor and would not cause a significant increase in criteria pollutants or GHG emissions.

Option A

Option A would involve the construction of a new Comfort Station on site, and the construction emissions associated with that new construction. Table 3-7 shows operational emissions estimates for Alternative 2 (Option A).

Table 3-7 Alternative 2, Option A Criteria Pollutants and GHG Emissions from Construction and Operations

Construction Emissions	*VOC*	*SO_x*	*NO_x*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*
Non-Road	0.06	0.0012	0.37	0.47	0.01	0.01	113.79
On-Road	0.01	0.0002	0.07	0.19	0.00	0.00	48.81
Fugitive	0.04	-	-	-	0.51	0.01	-
Construction Total	0.11	0.0014	0.44	0.66	0.53	0.02	162.61
Operational Emissions							
On-Road (RV Patron Trips)	0.13	0.0013	0.45	2.10	0.01	0.01	284.93
Emergency Generator	-	-	-	-	-	-	-
Natural Gas Combustion	-	-	-	-	-	-	-
Operational Total	0.13	0.0013	0.45	2.10	0.01	0.01	284.93
Alternative 2, Option A Totals	***0.24***	***0.0027***	***0.90***	***2.77***	***0.54***	***0.03***	***447.53***
De minimis threshold	***50***	***100***	***50***	***-***	***-***	***-***	***-***

Source (ACAM v5.0.23a)
Key: NO_x = nitrogen oxides; VOC = volatile organic compound; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; CO_2e = carbon dioxide equivalents.
Note: Emissions might not add up precisely due to rounding.

Option B

Construction emissions for Option B, renovation of the existing Retelle Building, would be slightly greater than those estimated under Option A. This estimate was based on the concept that there would be a greater construction effort required to renovate the existing Retelle Building versus new construction. Option B would involve the interior demolition and renovation of the Retelle Building; whereas, Option A would involve new construction. Construction and operational emission estimates for Alternative 2 (Option B) are shown in Table 3-8.

Table 3-8 Alternative 2, Option B Criteria Pollutants and GHG Emissions from Construction and Operations

Construction Emissions	*VOC*	*SO_x*	*NO_x*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*
Non-Road	0.07	0.0013	0.42	0.51	0.02	0.02	125.56
On-Road	0.01	0.0002	0.07	0.19	0.00	0.00	49.12
Fugitive	0.07	-	-	-	0.54	0.01	-
Construction Total	0.15	0.0015	0.50	0.71	0.56	0.02	174.68
Operational Emissions							
On-Road (RV Patron Trips)	0.13	0.0013	0.45	2.10	0.01	0.01	284.93
Emergency Generator	-	-	-	-	-	-	-
Natural Gas Combustion	-	-	-	-	-	-	-
Operational Total	0.13	0.0013	0.45	2.10	0.01	0.01	284.93
Alternative 2, Option B Totals	*0.28*	*0.0028*	*0.95*	*2.81*	*0.57*	*0.03*	*459.61*
De minimis threshold	***50***	***100***	***50***	***-***	***-***	***-***	***-***

Source (ACAM v5.0.23a)
Key: NO_x = nitrogen oxides; VOC = volatile organic compound; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; CO_2e = carbon dioxide equivalents.
Note: Emissions might not total precisely due to rounding.

Summary

Under Alternative 2 (Options A and B), construction would cause short-term, minor air quality effects. Construction emissions for Option B would be slightly greater than for Option A. The RV Park operation would cause long-term, minor air quality effects under Alternative 2 (Options A and B). Overall, short- and long-term air quality effects would be slightly greater under Alternative 2 compared to Alternative 1. Emissions from Alternative 2 would be below *de minimis* thresholds and would not be regionally significant. Thus, Alternative 2 is exempt from further analysis under the General Conformity Rule (see further details in the below Section 3.1.2.4, General Conformity Applicability Analyses and in Appendix C).

3.1.2.4 General Conformity Applicability Analyses

Tables 3-6, 3-7, and 3-8 show estimated criteria pollutant and GHG emissions that would be expected under Alternatives 1 and 2. Although each alternative would result in short- and long-term increases in NO_x, VOCs, and SO_2 emissions, estimated increases would be minor and well below *de minimis* thresholds. These emissions would not be expected to interfere with state or local air quality management plans; thus, a Record of Non-Applicability (RONA) was prepared. The full General Conformity Applicability Analyses, including detailed assumptions, calculations, and emissions factors and RONA can be found in Appendix C.

3.1.2.5 Greenhouse Gas Emissions Significance Comparison

GHG emissions resulting from Alternatives 1 and 2 would represent long-term, negligible increases in overall GHG emissions at NSA Annapolis and within the surrounding Air Quality Control Region. These emissions would persist into the future for the duration of the proposed RV Park operation. Overall, these GHG emissions would be insignificant when compared to state and U.S. level emissions. Table 3-9 compares the GHG emissions for the state, United States, and the proposed action alternatives. These emissions were converted to metric tons per year, an international standard for GHG comparisons.

Table 3-9 GHG Significance Comparison 2025–2036

Total GHG Relative Significance (metric tons per year)		
Time Frame	***Comparison Scale***	***CO_2e***
2025–2036	State Total	58,335,727
2025–2036	U.S. Total	5,163,581,798
Proposed NSA Annapolis RV Park		
2025–2036	Alternative 1	1,909
2025–2036	Alternative 2 (Option A)	2,732
2025–2036	Alternative 2 (Option B)	2,743

Source (ACAM v5.0.23a)

3.2 Water Resources

This discussion of water resources includes groundwater, surface water and wetlands, floodplains, shorelines, and coastal zone management.

3.2.1 Affected Environment

3.2.1.1 Groundwater

Groundwater is subsurface water found beneath the water table in soils and geologic formations. Groundwater is recharged by surface water that flows or seeps into the soil, which replenishes springs, wells, and aquifers. It is used for water consumption, agricultural irrigation, and industrial applications.

Anne Arundel County supplies potable water to North Severn Complex (USNA, 2024). The Patapsco Aquifer, which is a relatively deep aquifer approximately 600 to 700 feet below the ground surface, is situated beneath the Alternative 1 and Alternative 2 sites (Maryland Geological Survey, 2024). The Patapsco Aquifer continues to experience additional demand. There are concerns with saltwater intrusion for the shallower aquifers in this area. This concern has prompted increased use of the deeper Patapsco Aquifer (U.S. Geological Survey, 2012).

The Magothy Aquifer is also situated beneath the Alternative 1 and Alternative 2 sites (Maryland Geological Survey, 2024). The Magothy Aquifer has elevated iron levels, so it is primarily used by the City of Annapolis for irrigation and minor public supply (NAVFAC Washington, 2025).

3.2.1.2 Surface Water and Wetlands

This section discusses lakes, rivers, streams, and wetlands. Wetlands are jointly defined by the U.S. Army Corps of Engineers (USACE) as, “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3). NSA Annapolis is within the Severn River watershed, which is within the larger Chesapeake Bay watershed (USNA, 2001). The Severn River watershed contains numerous smaller subbasins near NSA Annapolis, such as Mill Creek and Severn River subbasins. At their confluence with the Chesapeake Bay, the tidally interconnected surface waters of these subbasins are brackish in salinity.

The Clean Water Act requires that states identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the sources causing impairment. A TMDL is the maximum amount of a substance that can be assimilated by a water body without causing impairment. Under EO 13508, *Chesapeake Bay Protection and Restoration Section 203 Final Coordinated Implementation Strategy,* the USEPA established Chesapeake Bay TMDLs to address excess nitrogen, phosphorus, and total suspended solids (pollutants of concern) in the bay (USEPA, 2010). The waters surrounding North Severn Complex are identified as impaired (USEPA, 2024).

Alternative 1 Site

Based on a formal wetland investigation, surface water and wetlands do not exist within the Alternative 1 site (NSA Annapolis, 2015). In addition, a recent reconnaissance-level field investigation conducted in June 2024 confirmed the lack of onsite surface water and wetlands. The northern part of the project area is approximately 100 feet away from Mill Creek. Mill Creek is a tidal creek that flows into Whitehall Bay and empties into the Chesapeake Bay. The eastern side of the project area is approximately 100 feet away from Whitehall Bay.

As shown in Figure 3-1, a 0.2-acre, non-tidal emergent wetland is approximately 130 feet south of the Alternative 1 site (at its closest point). “Emergent” generally refers to wetlands characterized by upright, rooted, water-dependent plants, excluding mosses and lichens (USFWS, 2024a). This 0.2-acre wetland

has a 100-foot buffer associated with it. If this action alternative is chosen, the Navy would consult with MDE during the site design process regarding this wetland.

Alternative 2 Site

Based on a formal wetland investigation, surface water and wetlands do not exist within the Alternative 2 site (NSA Annapolis, 2015). In addition, a recent reconnaissance-level field investigation conducted in June 2024 confirmed the lack of onsite surface water and wetlands. A 6.78-acre freshwater pond, Woolchurch Pond, is 898 feet (0.17 miles) northwest of the project area (see Figure 3-2). In addition, the project area is 1,109 feet (0.21 miles) from the Severn River, a tidal tributary of the Chesapeake Bay. The river was declared a Scenic River by the General Assembly of Maryland in 1971. The designated use of the Severn River is Class II, Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting. MDE classifies the tidal areas of the Severn River for nursery use from February 1 to May 31, for shallow water submerged aquatic vegetation use from April 1 to October 30 to a depth of one meter, and for open water fish and shellfish use year-round (NAVFAC Washington, 2021). The shoreline of the Severn River is mostly altered (i.e., bulkhead and riprap shoreline) along the areas owned by NSA Annapolis.

3.2.1.3 Floodplains

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100-year and 500-year floods.

The 100-year floodplain is defined as the area that has a one percent chance of inundation by a flood event in a year. The 500-year floodplain is an area with a 0.2 percent annual risk of flooding (FEMA, 2024). Floodplain delineation maps are produced by the Federal Emergency Management Agency (FEMA). Floodplains are associated with Carr Creek, Mill Creek, the Severn River, and the Chesapeake Bay (NAVFAC Washington, 2025).

Alternative 1 Site

Based on 2024 data from FEMA, Alternative 1 is not within the 100- or 500-year floodplain (see Figure 3-1). The project area would be 43 feet away from the 100-year floodplain of Mill Creek and 80 and 82 feet away from the 100- and 500-year floodplains of Whitehall Bay, respectively.

Alternative 2 Site

Based on 2024 data from FEMA, Alternative 2 is not within the 100- or 500-year floodplain (see Figure 3-2). The project area would be 890 feet away from the 100-year floodplain and 690 feet away from the 500-year floodplain associated with the Severn River.

Figure 3-1. Water Resources at the Alternative 1 Site

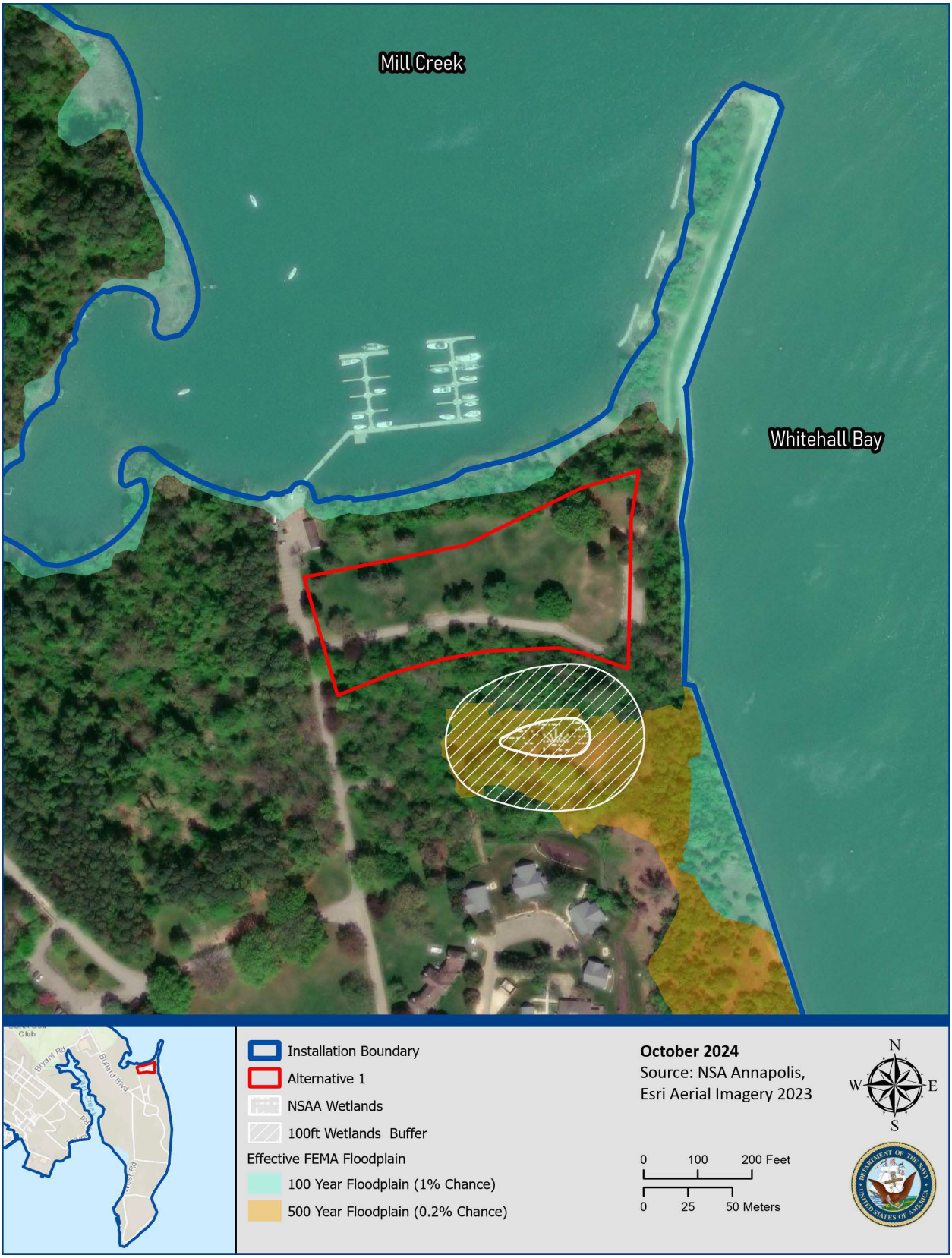


Figure 3-2. Water Resources at the Alternative 2 Site

3.2.1.4 Shorelines

Shorelines are located along marine (oceans), brackish (estuaries), or fresh (lakes) bodies of water. Physical dynamics of shorelines include tidal influences, channel movement, and hydrological systems; flooding or storm surge areas; erosion and sedimentation; water quality and temperature; presence of nutrients and pathogens; and sites with potential for protection or restoration. Shoreline ecosystems are vital habitat for multiple life stages of many fish, birds, reptiles, amphibians, and invertebrates.

North Severn Complex has approximately 12 miles of shoreline along the Severn River, Carr Creek, and Mill Creek (NAVFAC Washington, 2025). The Navy plans to restore and repair numerous installation shorelines over the next 20 years as funding becomes available (NAVFAC Washington, 2021).

Alternative 1 Site

The Mill Creek shoreline is approximately 100 feet away at its closest point from the Alternative 1 site. An approximately 70-foot vegetative buffer (including trees and shrubs) exists between the northern project site boundary and the Mill Creek shoreline. Possum Point has had extensive restoration with a hardened and living shoreline/marsh installation completed in 2017. The Mill Creek Marina shoreline is altered with concrete and some riprap. In addition, where Mill Creek meets Whitehall Bay, some of the shoreline is altered with riprap. The mostly riprap shoreline of Whitehall Bay is approximately 100 feet away at its closest point from the Alternative 1 site.

Alternative 2 Site

The Severn River shoreline is 1,109 feet (0.21 miles) away at its closest point from the Alternative 2 site. At this location, the shoreline consists of a bulkhead (retaining wall) and riprap.

3.2.1.5 Coastal Zone Management

NSA Annapolis is entirely within Maryland's Coastal Zone (MDE, 2024). Maryland's Coastal Zone, "extends from three miles out in the Atlantic Ocean to the inland boundaries of the 16 counties and Baltimore City that border the Atlantic Ocean, Chesapeake Bay and the Potomac River up to the District of Columbia" (Maryland DNR, 2024a). Activities conducted along shorelines are likely to affect use of lands, waters, or natural resources of the coastal zone beyond the boundaries of federal property. Thus, federal activities must be consistent, to the maximum extent practicable, with the enforceable policies of Maryland's Coastal Zone Management Program in accordance with the federal Coastal Zone Management Act (CZMA) of 1972. Maryland's Coastal Zone Management Program addresses coastal hazards, growth management, habitat and living resources, non-point source pollution, non-tidal wetlands, provision of public access, and tidal wetlands (Maryland DNR, 2024b).

Per the Memorandum of Understanding between the DoD and the State of Maryland (May 2013), the CZMA Coastal Consistency Determination (CCD) submission includes consultation with MDNR, MDE, and other agencies such as the Critical Area Commission (State of Maryland and Department of Defense, 2013). Through the continuation of the CCD consultation, with more detailed information tailored to the chosen action, effects to the coastal zone will be considered.

Alternative 1 Site

The Alternative 1 project area is greater than 100 feet from the shoreline but is still subject to CZMA. The CCD consultation, described above, will ensure effects on the coastal zone are considered.

Alternative 2 Site

The Alternative 2 project area is greater than 100 feet from the shoreline but is still subject to CZMA. The CCD consultation, described above, will ensure effects on the coastal zone are considered.

3.2.2 Environmental Consequences

This section analyzes the potential effects from the alternatives on groundwater, surface water and wetlands, floodplains, shorelines, and coastal zone management. Groundwater analysis focuses on potential effects on the quality, quantity, and accessibility of the groundwater. Surface water analysis considers potential effects that might directly alter or indirectly degrade surface waters or wetlands, water quality, or hydrology. Floodplain effect analysis considers if any new construction is proposed within a floodplain or could impede the floodplain functions. The analysis of shorelines considers if the Proposed Action would affect shoreline erosion or ecological functions. Coastal zone management discusses the Proposed Action's consistency with the federally enforceable policies of Maryland's Coastal Zone Management Program.

3.2.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to existing water resources. Therefore, no significant effects on water resources would occur.

3.2.2.2 Alternative 1 Potential Effects

Groundwater

Proposed construction activities would not involve withdrawals from groundwater. No direct effects on groundwater would occur during construction. Use of BMPs (for example, good housekeeping measures for construction equipment containing POL) would prevent leaching of construction-related contaminants into groundwater resources. In addition, POL would be used, stored, and transferred in accordance with the North Severn SPCC Plan. The Proposed Action would not increase the demand for pumped groundwater.

Under Alternative 1, there would be a net increase of approximately 1 acre of impervious surface (non-porous surface) and a total LOD of 3.25 acres. Impervious surfaces decrease the area available for precipitation to infiltrate the soil and replenish groundwater. However, most of the site (2.25 acres) would remain pervious (porous and vegetated), which would allow groundwater supplies to be adequately replenished. Therefore, long-term effects on the groundwater supply would be negligible.

The RV Park sewage hookups would include a secondary containment to reduce the risk of leakage into groundwater from this connection. Any potential POL leaks from parked RVs would be managed in accordance with the North Severn SPCC Plan. Phone numbers posted on the Comfort Station would direct users where to call in the event of a spill. The NSA Annapolis environmental department would adhere to all reporting protocols in the event of sewage spill. Long-term effects from potential sewage or RV leaks would be negligible.

Surface Water and Wetlands

There are no surface waters or wetlands within the Alternative 1 project area; thus, there would be no direct effects on surface water or wetlands. Mill Creek is the closest surface water body to the Alternative 1 project area. Whitehall Bay is east of the project area. An emergent wetland is

approximately 130 feet south of the project area. If Alternative 1 is the chosen site for the RV Park, the Navy would consult with MDE during the design process regarding this wetland. Because the Alternative 1 construction disturbance is greater than 5,000 square feet, MDE-approved Erosion and Sediment Control (ESC) plans are required. A stormwater management plan would be included with the ESC plan approval. The ESC plan approval would address ESC during construction. In addition, a National Pollutant Discharge Elimination System (NPDES) General Construction Permit would be required for the project because the disturbance exceeds one acre. The ESC plan approval also requires the use of BMPs to protect against soil erosion and sedimentation into receiving water bodies, minimize the exposure of construction materials and debris to stormwater, and for the treatment of stormwater associated with new development. During the design phase, the Navy would consider the use of permeable pavements as part of the RV park design, if practicable, including but not limited to pervious concrete, porous asphalt, pervious pavers, and/or geocell for new RV pads instead of concrete. The specific BMPs to be implemented would be determined during the design stage and approved by MDE as part of the ESC plan approval process. A possible stormwater BMP would be the incorporation of a rain garden; BMP approaches would be considered and determined during the design stage. Such BMPs would minimize the indirect effects on the adjacent off-site surface waters and wetlands.

Silt fence would be installed at the LODs and would reduce sediment from leaving the site. Sediment basins and/or temporary traps may be installed, as necessary, to prevent sediments from leaving the construction site. Once construction stormwater management controls are in place, the site would be cleared and graded. Temporary revegetation would occur as soon as areas are brought to grade to prevent soil erosion.

Permanent Alternative 1 stormwater management controls would be designed to ensure that post-development hydrology meets or improves pre-development hydrology, pursuant to Section 438 of the Energy Independence and Security Act and MDE stormwater quality treatment regulations. Low-impact development and the use of green or non-green infrastructure would also be used. Disturbed areas would be stabilized with permanent vegetation immediately following construction completion. Permanent sediment traps or filtering devices may be installed, as necessary, to prevent sediments from leaving the site.

Floodplains

Alternative 1 would not occur in the 100- or 500-year floodplains; thus, there would be no direct effects on floodplains. The increase in impervious surface from Alternative 1 would add the potential for future flood vulnerability. However, because the project area would not directly overlap the floodplain, there should not be a notable increase in flood vulnerability (see Figure 3-1). Consultation would occur with MDE's Stormwater, Dam Safety, and Flood Management Program prior to construction. In addition, pursuant to Section 438 of the Energy Independence and Security Act, the post-development hydrology would meet or improve the pre-development hydrology of the site, which would help preserve the nearby floodplain to reduce flood risk. Thus, indirect effects on the adjacent floodplain would be minor under Alternative 1; there would be no significant effects on floodplains.

Shorelines

During the public scoping period, the Navy received public comments concerning the original location of the Alternative 1 boundary, which was within 100 feet of the shoreline. Avoidance of environmental constraints at the Alternative 1 site is an important consideration for the Navy; therefore, the proposed Alternative 1 boundary was moved to shoreline impacts.

Alternative 1 is not on the shoreline; therefore, there would be no direct effects on shorelines. However, the project area is approximately 100 feet away from the Mill Creek and Whitehall Bay shorelines. The RV Park would increase impervious surface near the shoreline. The Greenbury Point shoreline is vulnerable to storm surge. It would take a Category 3 or 4 hurricane for storm surge to reach a small portion of the northern boundary of the project area (NAVFAC Washington, 2018a).

Implementing BMPs, such as a stormwater management plan and ESC Plan prior to construction, would minimize the potential for stormwater runoff leading to shoreline erosion. The vegetative buffers that exist between the project site and Mill Creek and Whitehall Bay would further slow the flow and runoff from reaching the shoreline. The portions of the Mill Creek shoreline that support wildlife would also be protected by the existing 70-foot vegetative buffer. Thus, indirect effects on shorelines would be minor. Alternative 1 would not have significant effects on shorelines.

Coastal Zone Management

Alternative 1 is within Maryland's Coastal Zone. In accordance with Section 307 of CZMA, the Navy submitted a CCD to MDE. The Navy's determination submittal and CZMA conditional concurrence letters are included in Appendix B of this EA.

The CCD consultation, described in Section 3.2.1.5, will ensure effects on Maryland's Coastal Zones are considered. A stormwater management plan would be incorporated into the MDE-approved ESC plan, which would include stormwater runoff, treatment, and debris control measures. During design, the stormwater management plan and environmental site design information would be submitted to MDE for continued consultation under the CZMA. With BMPs and the MDE-approved plans in place, indirect effects on Maryland's Coastal Zone under Alternative 1 would be minor in the short and long term.

Summary

Alternative 1 would not cause direct effects to water resources. Construction would cause indirect, short-term, minor effects to surface water and wetlands, floodplains, shorelines, and the coastal zone. Short- and long-term effects on groundwater would be negligible during construction and operation of the RV park. The increase in impervious surface would result in long-term, minor effects on surface water and wetlands, floodplains, shorelines, and the coastal zone; however, BMPs would minimize these effects. Alternative 1 would not have significant effects on water resources.

3.2.2.3 Alternative 2 Potential Effects

Groundwater

Under Alternative 2, groundwater effects would be similar to Alternative 1. The implementation of BMPs and an MDE-approved ESC plan, with included stormwater management plan, would prevent contaminants from entering groundwater resources. Alternative 2 could add approximately 14,700 square feet (0.35 acres) more impervious surface than Alternative 1 to accommodate more RV sites. Under Option A, there would be 1.35 acres of new impervious surface. Under Option B, there would be 1.30 acres of impervious surface added. For both Options A and B, potential short- and long-term effects on groundwater would be negligible.

Surface Water and Wetlands

There are no surface waters or wetlands within the Alternative 2 project area; thus, there would be no direct effects on surface waters or wetlands. The Severn River is 1,109 feet (0.21 miles) from the

Alternative 2 site, far enough to limit any stormwater runoff effects. In addition, there is vegetation that would serve as a slight buffer between the Alternative 2 site and the Severn River. Due to the topography, stormwater runoff would not flow to or affect Woolchurch Pond. Because the Alternative 2 construction disturbance is greater than 5,000 square feet, MDE-approved ESC plans are required. A stormwater management plan would be included with the ESC plan approval. The ESC plan approval would address ESC during construction. In addition, an NPDES General Construction Permit would be required for the project since the disturbance exceeds one acre. The ESC plan approval also requires the use of BMPs to protect against soil erosion and sedimentation into receiving water bodies. For these reasons, Alternative 2 would have no indirect, long- or short-term, effects on surface waters, wetlands, or Woolchurch Pond.

During the design phase, the Navy would consider the use of permeable pavements as part of the RV park design, if practicable, including but not limited to pervious concrete, porous asphalt, pervious pavers, and/or geocell for new RV pads instead of concrete.

Floodplains

Alternative 2 (Options A and B) would not occur in the 100- or 500-year floodplains; thus, there would be no direct effects on floodplains. Given the site is 890 feet away from the 100-year floodplain and 690 feet away from the 500-year floodplain of the Severn River, indirect effects on the floodplains would not occur.

Shorelines

Alternative 2 (Options A and B) would not occur on any shorelines; thus, there would be no direct effects on shorelines. Alternative 2 is 1,109 feet (0.21 miles) from the Severn River. Given this distance, indirect effects on shorelines would not occur.

Coastal Zone Management

The Alternative 2 site is within Maryland's Coastal Zone. In accordance with Section 307 of CZMA, the Navy submitted a CCD to MDE. The Navy's determination submittal is included in Appendix B of this EA. The CCD consultation, described in Section 3.2.1.5, will ensure effects on Maryland's Coastal Zone are considered. A stormwater management plan would be incorporated into the MDE-approved ESC plan, which would include stormwater runoff, treatment and debris control measures. During design, the stormwater management plan and environmental site design information would be submitted to MDE for continued consultation under the CZMA. With BMPs and the MDE-approved plans in place, indirect effects on Maryland's Coastal Zone under Alternative 2 would be minor in the short and long term.

Summary

Alternative 2 would not cause direct effects to water resources. There would be no indirect effects on surface water and wetlands, floodplains, and shorelines. Short- and long-term effects on groundwater would be negligible during construction and operation of the RV park. Indirect effects on Maryland's Coastal Zone would be minor in the short and long term. Alternative 1 would cause indirect effects to all categories under water resources, whereas, Alternative 2 would not cause indirect effects to surface water and wetlands, floodplains, and shorelines. In addition to creating more impervious surfaces, Alternative 2 would require more tree clearing. BMPs would minimize potential effects. Alternative 2 would not have significant effects on water resources.

3.3 Geological Resources

This discussion of geological resources includes geology, topography, and soils. The geology of an area can include bedrock materials, mineral deposits, and fossil remains. Topography is typically described with respect to the elevation, slope, and surface features found within the study area. Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Severe weather events may accelerate soil erosion in future years. Soils are typically described in terms of their type, slope, physical characteristics, and relative land use compatibility or building limitations. Within water bodies, geological resources also include bathymetry (topography of a sea floor or river bottom) and marine sediments. However, because the Proposed Action would not occur in any waterways, there would be no effect on bathymetry or marine sediments, and these topics are not discussed further.

3.3.1 Affected Environment

The following discussion describes the existing geological resources within the Alternatives 1 and 2 study areas, which include the proposed limits of ground disturbance.

3.3.1.1 Geology

The study areas are within the Atlantic Coastal Plain physiographic province. The Coastal Plain is, "a flat, lowland area with a maximum elevation of about 300 feet. It is supported by a bed of crystalline rock covered with southeasterly dipping wedge-shaped layers" (Chesapeake Bay Program, 2024). These layers consist of unconsolidated sediments containing gravels, sands, and clays of the Triassic to Quaternary Periods. Geologic formations occurring in the study areas include the Aquia Greensand and Matawan Formation, which overlie the Magothy Formation. No major geographical structural features or active fault lines are in the study areas; therefore, geology was dismissed from further analysis (NAVFAC Washington, 2025).

3.3.1.2 Topography

NSA Annapolis is within the Western Shore Lowlands region of the Atlantic Coastal Plain. Elevations on the installation range from sea level to 97 feet above mean sea level (MSL). North Severn Complex occupies a relatively low profile adjacent to the Severn River and Chesapeake Bay. Most of the area has gentle slopes of less than 15 percent. Steeper slopes exist near Woolchurch Pond, Kinkaid Road, and the existing golf course. Located in the northern portion of the North Severn Complex, the golf course represents the highest elevation at 97 feet above MSL.

Alternative 1 Site

The Alternative 1 study area is an elevated parcel of relatively flat land. It has low slopes across most of the site, rising to medium in areas of the southwestern and northeastern portions of the site (see Figure 3-3). Elevations range from 10 feet above MSL in the northeastern corner to 18 feet above MSL in the southwestern portion of the site.

Alternative 2 Site

The Alternative 2 study area has varying topography. It has mostly low slopes and flat terrain in the southern portion of the site; whereas, it has steep slopes and uneven terrain in the northern portion (see Figure 3-4). The southwestern edge of the site also has steep slopes. Elevations range from 51 feet above MSL at the southern end to 83 feet above MSL at the northern end of the site.

Figure 3-3. Topographic Map for Alternative 1

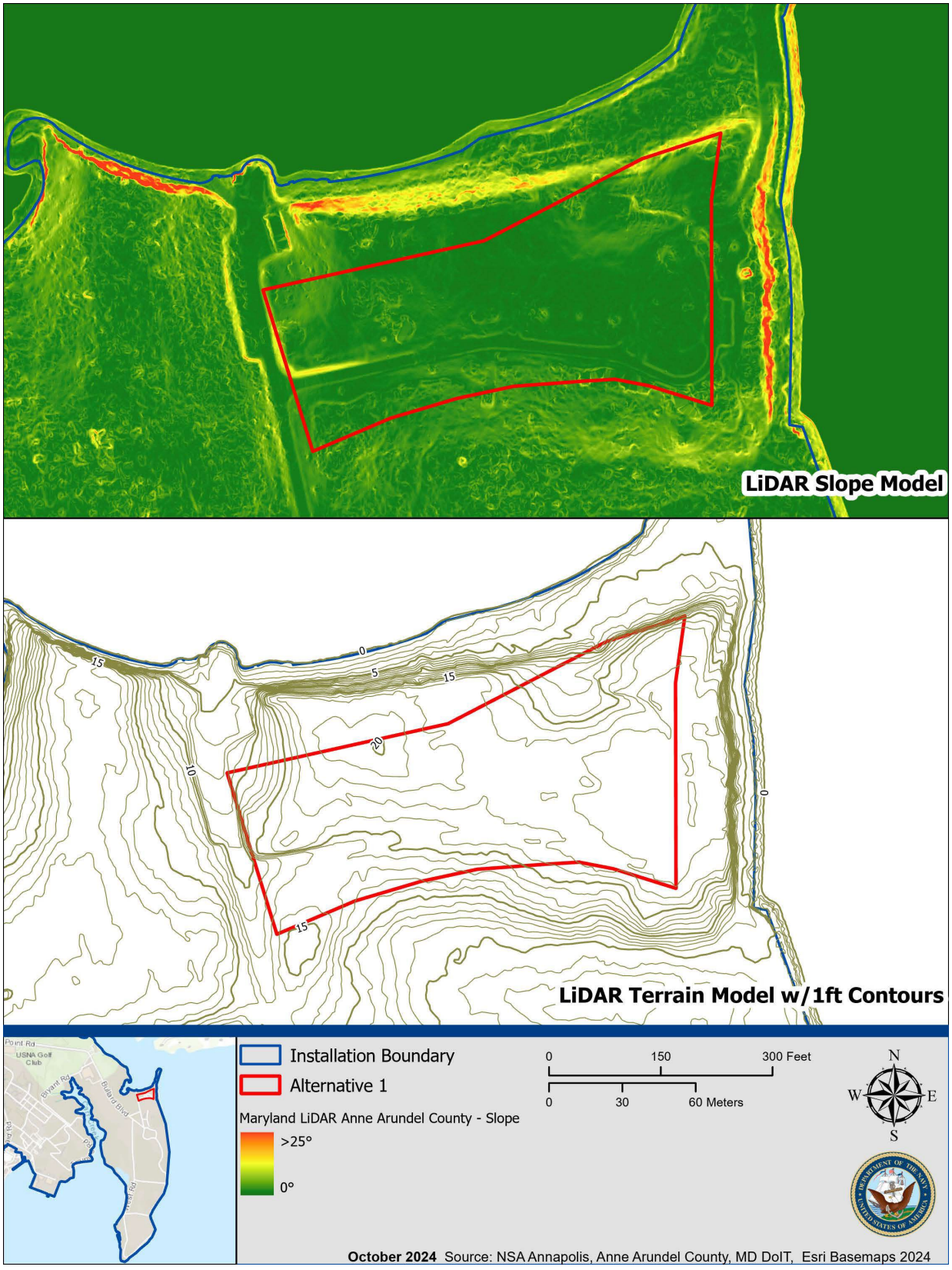
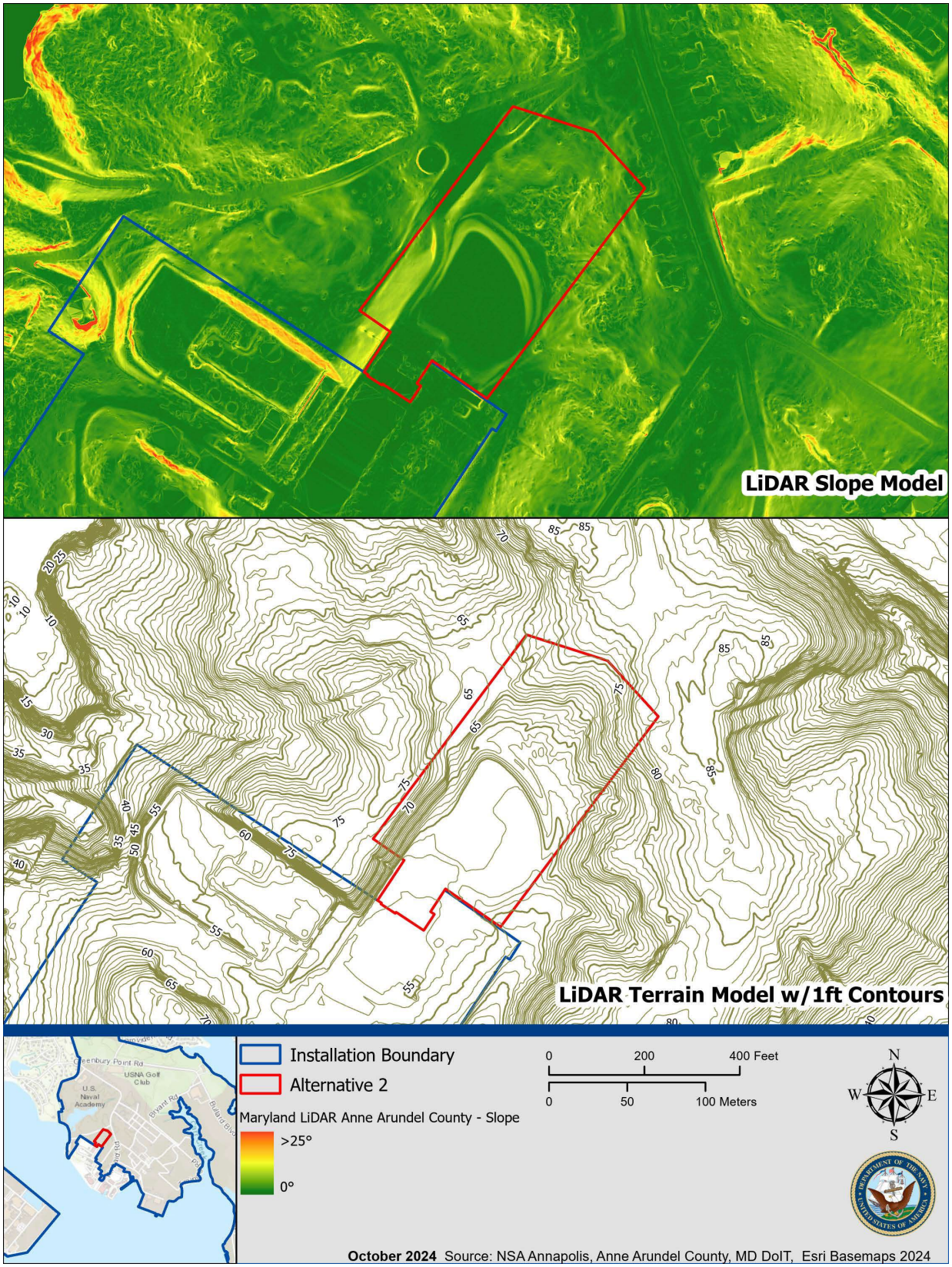


Figure 3-4. Topographic Map for Alternative 2



3.3.1.3 Soils

The soils of North Severn Complex derive from unconsolidated sediments of the Coastal Plain. The study areas contain various soil types.

Alternative 1 Site

The study area primarily contains disturbed soils because of previous development (see Figure 3-5). There are three soil types found within the Alternative 1 study area (see Table 3-10), all well-drained and non-hydric soils with fine sandy loam textures. As shown in Figure 3-6, most of the study area is composed of Annapolis-Urban land complex (AuB); the parent material is human-transported material. There is also a small amount of Annapolis fine sandy loam (AsC), which has a moderate erosion hazard and a small amount of Annapolis fine sandy loam (AsE), which has a severe erosion hazard. Both AsC and AsE soil types are more vulnerable to soil erosion than the primary soil type in the study area (AuB). AsC soil is classified as a farmland of statewide importance; however, DoD lands are not subject to the Farmland Protection Policy Act (USDA, 2024).

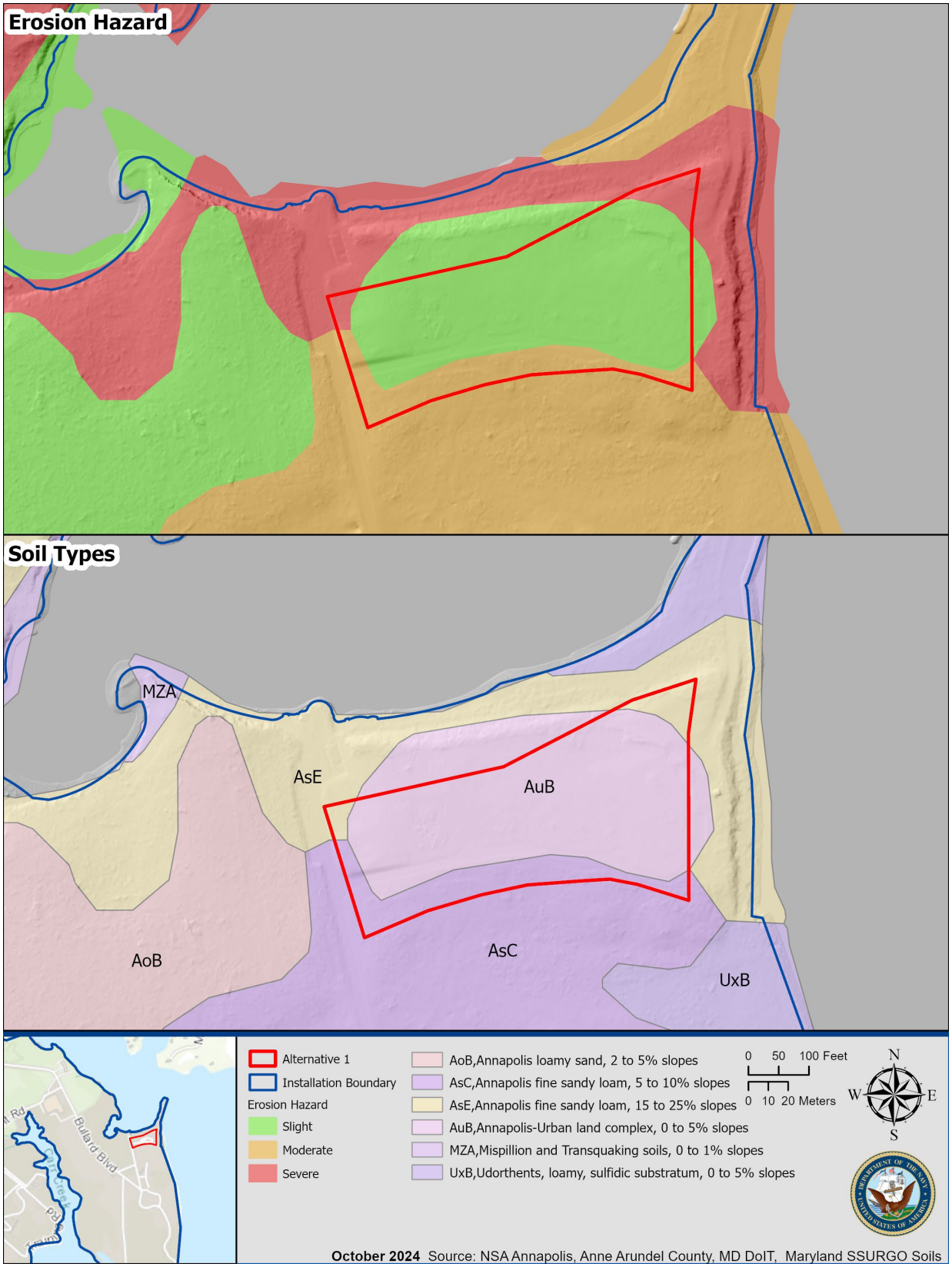
Table 3-10 Soil Conditions within the Alternative 1 Study Area

Soil Type	*Percent Slope*	*Parent Material*	*Drainage Class*	*Runoff Class*	*Ecological Site*	*Erosion Hazard*
Annapolis fine sandy loam (AsC)	5 to 10%	Glauconitic loamy fluviomarine deposits	Well-drained	Medium	F149AY150MD — Well-Drained Glauconitic Fine-Loamy Upland	Moderate
Annapolis fine sandy loam (AsE)	15 to 25%	Glauconitic loamy fluviomarine deposits	Well-drained	High	F149AY150MD — Well-Drained Glauconitic Fine-Loamy Upland	Severe
Annapolis-Urban land complex (AuB)	0 to 5%	Glauconitic loamy fluviomarine deposits	Well-drained	Low	F149AY150MD — Well-Drained Glauconitic Fine-Loamy Upland	Slight

Source: (NRCS, 2024)

Figure 3-5. 1970 Aerial of Alternative 1 Showing Previous Ground Disturbance

Figure 3-6. Soil Resources at the Alternative 1 Site



Alternative 2 Site

There are six soil types found within the Alternative 2 study area (see Table 3-10). In addition to the three soil types found in the Alternative 1 study area, the Alternative 2 study area contains Collington and Annapolis soils (CRD), Sassafras fine sandy loam (SaB), and Urban Land (Uz). CRD and SaB soils have medium and very low runoff class ratings, respectively. The soil types in the study area are well-drained and non-hydric (Table 3-11; (NRCS, 2024)).

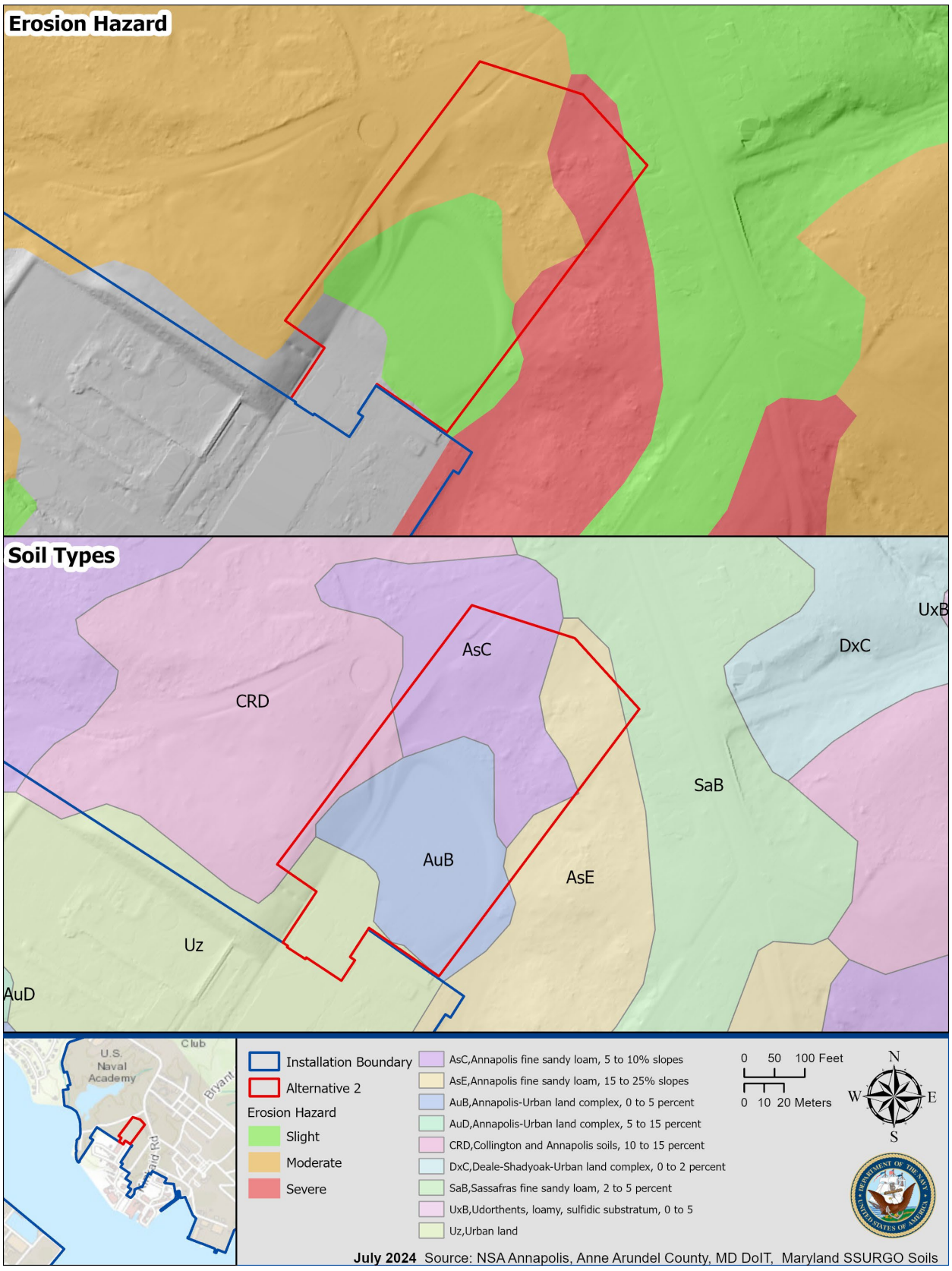
The two predominant soil types are AuB and AsC, which have a slight and moderate erosion hazard, respectively (see Figure 3-7). To a lesser extent, Annapolis fine sandy loam (AsE) is on the northeastern portion of the study area and has a severe erosion hazard. These soils are more susceptible to erosion than the other soil types found within the study area. The study area contains soil classified as farmland of statewide importance (AsC) and a very small corner of the site (approximately 1,000 square feet) is classified as prime farmland soil (SaB) (USDA, 2024). DoD lands are not subject to the Farmland Protection Policy Act. This soil is in an area that was previously used for base housing and includes Kinkaid Road.

Table 3-11 Soil Conditions within the Alternative 2 Study Area

Soil Type	*Percent Slope*	*Parent Material*	*Drainage Class*	*Runoff Class*	*Ecological Site*	*Erosion Hazard*
Annapolis fine sandy loam (AsC)	5 to 10%	Glauconitic loamy fluviomarine deposits	Well-drained	Medium	F149AY150 MD — Well-Drained Glauconitic Fine-Loamy Upland	Moderate
Annapolis fine sandy loam (AsE)	15 to 25%	Glauconitic loamy fluviomarine deposits	Well-drained	High	F149AY150 MD — Well-Drained Glauconitic Fine-Loamy Upland	Severe
Annapolis-Urban land complex (AuB)	0 to 5%	Glauconitic loamy fluviomarine deposits	Well-drained	Low	F149AY150 MD — Well-Drained Glauconitic Fine-Loamy Upland	Slight
Collington and Annapolis soils (CRD)	10 to 15%	Glauconite bearing loamy fluviomarine deposits	Well-drained	Medium	F149AY170 MD — Well-Drained Fine-Loamy Upland	Moderate
Sassafras fine sandy loam (SaB)	2 to 5%	Loamy fluviomarine deposits	Well-drained	Very low	F149AY170 MD — Well-Drained Fine-Loamy Upland	Slight
Urban Land (Uz)	-	-	-	-	-	-

Source: (NRCS, 2024)

Figure 3-7. Soil Resources at the Alternative 2 Site



3.3.2 Environmental Consequences

This analysis focuses on the potential effects from the alternatives on topography and soils.

3.3.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. There would be no change to existing topography and soils. Therefore, no significant effects on geological resources would occur.

3.3.2.2 Alternative 1 Potential Effects

Topography

Because the study area was previously developed, it is mostly flat and conducive to development. Alternative 1 construction disturbance would exceed 5,000 square feet; therefore, MDE-approved ESC plans are required. A stormwater management plan would be included with the ESC plan approval. The ESC plan would address erosion and sediment control during construction by showing the existing topography of the site, indicating how the topography would be altered, and identifying measures to minimize effects. In addition, an NPDES General Construction Permit would be required for the project because the disturbance exceeds one acre. Dependent on the site designs, the Navy would conduct a geotechnical assessment prior to construction activities, if required. The assessment would help identify BMPs that are best suited for site-specific topography, if warranted. With the implementation of MDE-approved ESC plans and use of BMPs, long-term, minor effects would be expected from localized changes in topography.

Soils

Ninety-two percent of the soil at the Alternative 1 site is Annapolis-Urban land complex (AuB), which originates from fill material and has a slight erosion hazard. The remaining 8 percent of soil has either a moderate or severe erosion hazard. Construction activities, like grading and earthwork, would remove vegetative cover and compact or disturb soil. Exposed soil is susceptible to erosion by wind and surface runoff. The implementation of MDE-approved ESC plans would minimize effects from erosion and sedimentation, and limit potential soil transport into nearby Mill Creek and Whitehall Bay. NSA Annapolis would comply with applicable state ESC laws and stormwater management laws, which would minimize soil erosion and sedimentation.

If a geotechnical assessment were required prior to construction activities, it would be conducted to identify any site-specific limitations associated with the underlying geology and soil properties and to identify suitable BMPs.

Under Alternative 1, there would be approximately 1 acre of new impervious surface, including approximately 35 new concrete RV pads and a new pedestrian walkway/drive aisle. Impervious surfaces cannot absorb water like natural landscapes can; instead, water drains across these surfaces towards localized downhill areas. Such areas could see corresponding increases in erosion. In addition, Alternative 1 would involve some tree clearing. Tree roots hold soil in place, increasing the stability and containment of soils within an area. Removing trees would lead to higher rates of runaway soil and erosion; thus, trees would be preserved to the maximum extent possible. Similarly, trenching for and laying utility lines would temporarily disturb soil structure. Therefore, the construction activities under Alternative 1 would result in slight changes in erosion and sedimentation patterns. However, with the

implementation of the ESC plan and use of BMPs, the potential for soil and sediment transport during construction would be minor and short-term.

Summary

Under Alternative 1, there would be short-term, minor effects on soils from increased soil erosion and sedimentation during construction. There would be long-term, minor effects on soils from increased impervious surface and from localized changes in topography. Alternative 1 would not have significant effects on geological resources.

3.3.2.3 Alternative 2 Potential Effects

Option A

Topography

The northern portion of the Alternative 2 site would require considerable grading. Because the Alternative 2 construction disturbance is greater than 5,000 square feet, an MDE-approved ESC plan and associated stormwater management plan would be required. An NPDES General Construction Permit would be required for the project since the disturbance exceeds one acre. With the implementation of MDE-approved ESC plans and use of BMPs, the grading required at the northern end of the study area would result in long-term, moderate, localized change in topography.

Soils

Similar to Alternative 1, the construction of 35 to 50 new concrete RV pads, tent and primitive camp sites, and proposed access road would occur under Alternative 2. This site includes an existing grass softball field to the south and a forested area on the northeast portion. Alternative 2 (Option A) would involve new impervious surface, tree clearing, utility installation, and land disturbance. Under Alternative 2 (Option A), there would be 1.35 acres of new impervious surface. Alternative 2 could add 14,700 square feet (0.35 acres) more impervious surface than Alternative 1. Thirty-nine percent of soils at the Alternative 2 study area are classified as having a slight erosion hazard, 31 percent of soils as having a moderate erosion hazard, and 17 percent as having a severe erosion hazard. The remaining 13 percent of soils are urban land. Trees would be preserved to the maximum extent practicable; however, more trees would be cleared under Alternative 2. Thus, higher rates of soil erosion could occur during construction, as compared to Alternative 1. For these reasons, Alternative 2 would have slightly more short and long-term effects on soils than Alternative 1. As previously discussed, a stormwater management plan and associated ESC Plan would help minimize effects from erosion and sedimentation.

While approximately 1,000 square feet of the Alternative 2 site includes prime farmland soils, the surrounding area with this soil type was previously disturbed for base housing and Kinkaid Road. Alternative 2 would not remove or convert farmland to a non-agricultural use.

The use of site-specific BMPs would limit the potential for soil erosion and sediment transport from construction. With the implementation of BMPs under Alternative 2, short-term, minor effects on soils would occur.

Option B

Effects under Option B would be the same as those described under Option A; however, Option B would result in slightly less impervious surface (1.30 acres), due to the reuse of the Retelle Building, compared to construction of a new Comfort Station. Overall effects would be the same as those described under Option A, but with slightly lower runoff potential.

Summary

Under Alternative 2, there would be short-term, minor effects on soils from construction. Due to the higher proportion of soils vulnerable to erosion, Alternative 2 would have slightly more effects on soils during construction, compared to Alternative 1. In the long term, Alternative 2 would have slightly more effects on soils due to increased impervious surface, compared to Alternative 1. Option A would result in slightly more impervious surface than Option B, and, therefore, a slightly greater long-term effect on soils. Long-term, moderate effects would result from localized changes in topography; however, this effect would be slightly less due to less ground disturbance under Option B. Implementation of the MDE-approved ESC plan and BMPs would mitigate effects. Alternative 2 would not have significant effects on geological resources.

3.4 Cultural Resources

This discussion of cultural resources includes prehistoric and historic archaeological sites; historic buildings, structures, and districts; and physical entities and human-made or natural features important to a culture, a subculture, or a community for traditional, religious, or other reasons. Cultural resources can be divided into three major categories:

- Archaeological resources (prehistoric and historic) are locations where human activity measurably altered the earth or left deposits of physical remains.
- Architectural resources include standing buildings, structures, landscapes, and other built-environment resources of historic or aesthetic significance.
- Traditional cultural properties include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

The effects on visual resources are discussed in Section 3.5 of this EA.

3.4.1 Affected Environment

Cultural resources listed in the NRHP or eligible for listing in the NRHP are “historic properties” as defined by the National Historic Preservation Act (NHPA). The list was established under the NHPA and is administered by the National Park Service on behalf of the Secretary of the Interior. The NRHP includes properties on public and private land. Properties can be determined eligible for listing in the NRHP by the Secretary of the Interior or by a federal agency official with concurrence from the applicable State Historic Preservation Office (SHPO). An NRHP-eligible property has the same protections as a property listed in the NRHP. Historic properties include archaeological and architectural resources. The Navy has conducted inventories of cultural resources at NSA Annapolis to identify historic properties that are listed or potentially eligible for listing in the NRHP (NAVFAC Washington, 2018b).

The area of potential effect (APE) for above-ground cultural resources for Alternative 1 and Alternative 2 is defined as the entire project area for each alternative location, the portions of the North Severn Complex that would undergo ground disturbance, and all areas from which the proposed construction would be visible. The archaeological APE are the boundaries associated with each alternative. The APE for Alternative 1 is shown in Figure 3-8, and the APE for Alternative 2 is shown in Figure 3-9.

3.4.1.1 Archaeological Resources

There are 31 archaeological sites at the North Severn Complex; however, there are no sites within the project boundaries for either Alternative 1 or Alternative 2 (NAVFAC Washington, 2018b).

3.4.1.2 Architectural Resources

No architectural resources are located within the APE for Alternative 1.

Several resources associated with the former NSWC, Carderock Division, Annapolis Detachment are within the Alternative 2 APE. Constructed in 1946 as a warehouse, the MWR Retelle Building; Building 103RL (MHT inventory #AA-2179-1), is the only resource out of the 96 buildings and structures of the former NSWC that remains on Navy property (NAVFAC Washington, 2018b; Kuhn & Groesbeck, 2013).

3.4.1.3 Traditional Cultural Properties

No traditional cultural properties are known within NSA Annapolis, so traditional cultural properties are not discussed further in this EA.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Under the No Action Alternative, there would be no new construction, no ground disturbance, and no visual effects on cultural resources. The No Action Alternative would not change existing cultural resource conditions and would have no significant effects.

3.4.2.2 Alternative 1 Potential Effects

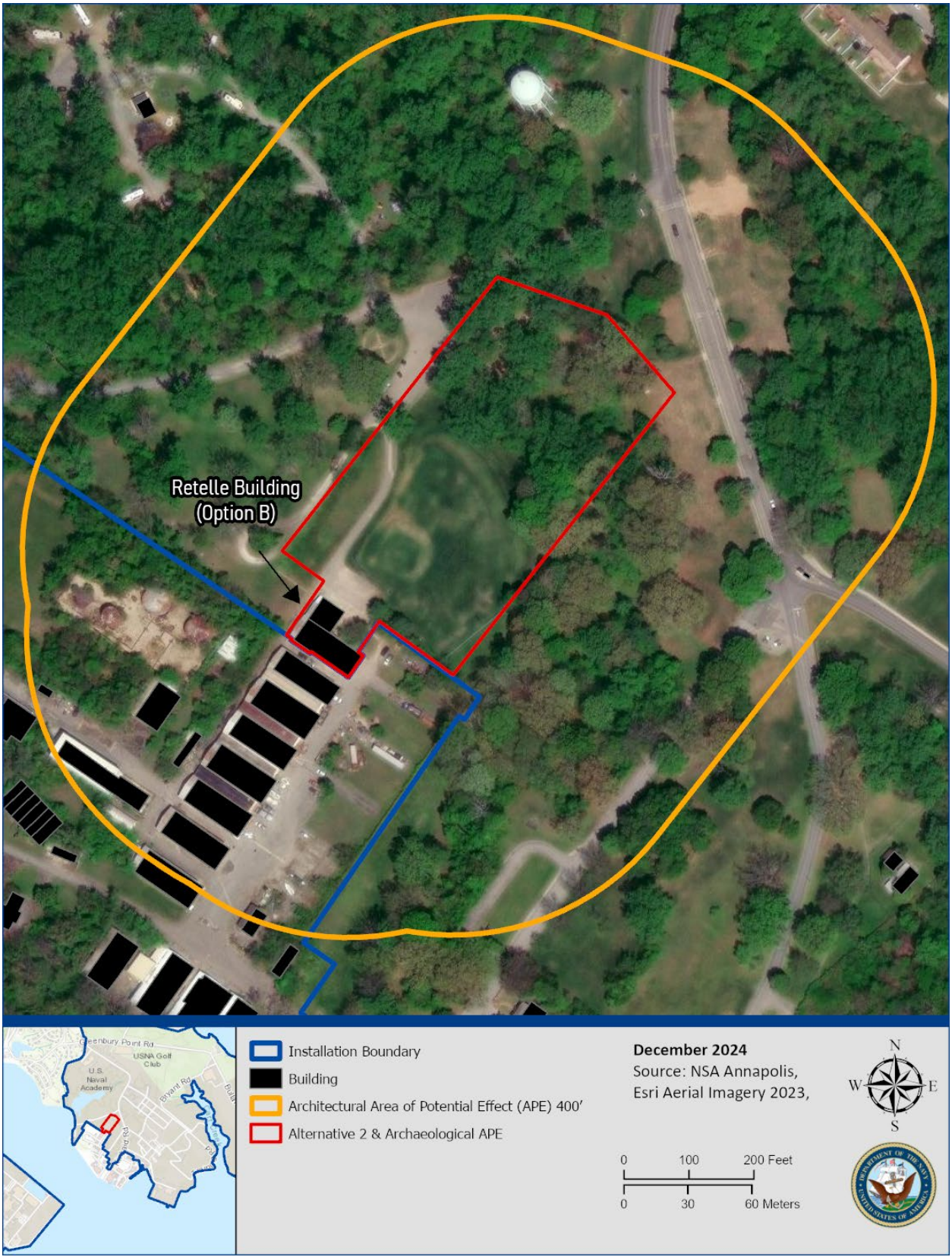
There have been two archaeological surveys that included portions of the area within Alternative 1 (Beauregard, 1996) (Seidel 2000, as cited in (U.S. Navy, 1999)). The Beauregard study recommended no additional archaeological investigations in this area.

There are no architectural resources within the Alternative 1 APE, so indirect effects are not analyzed.

Historically, there were four buildings at the Alternative 1 site; three were large, multi-family residential buildings and the fourth served as a clubhouse built by the Navy. These buildings are no longer in existence—the residential buildings were removed in 2010, and the fourth building was demolished between 1994 and 2002 (NETR Online, 2024).

Figure 3-8. Alternative 1 Area of Potential Effect

Figure 3-9. Alternative 2 Area of Potential Effect



In 2020, the Navy began an initial consultation for the Alternative 1 site with the Maryland SHPO, and the SHPO concurred there would be no adverse effect. The initial consultation listed 35 new RV pads, 2 ABA-compliant sites, approximately 6 primitive camping sites, a centralized vending area, laundry, enclosed dumpster and recycling pad; and 4 unisex cabana style ABA-accessible bathhouses. The revised plan, as stated in the EA, includes approximately 35 new RV pads, 4 ABA-compliant sites, tent and primitive camping sites, and the construction of a Comfort Station. The amount of previous disturbance at the site, the shallow depths of the concrete pads, and previous studies recommending no additional archaeological investigations in the area determine there would be no effects on archaeological resources under Alternative 1. The revisions to the plans since the original consultation would not cause any effects on historic properties, either archaeological or architectural. Consultation with the Maryland SHPO pursuant to Section 106 of the NHPA continued under this EA. In a letter dated June 12, 2025, the SHPO concurred with the Navy's findings that construction of a new RV Park under Alternative 1 would have no adverse effect on historic properties (Appendix B).

Summary

Since there are no architectural or archaeological resources within the APE, there would be no short-term or long-term effects on historic resources. Therefore, Alternative 1 would not cause significant effects on cultural resources. The Navy consulted with the Maryland SHPO pursuant to Section 106 of the NHPA, and the SHPO concurred with the finding of no adverse effect for the implementation of the Proposed Action at either Alternative location (Appendix B).

3.4.2.3 Alternative 2 Potential Effects

Option A

Under Option A, a new Comfort Station would be constructed. An archaeological sensitivity map for the area provided in the Integrated Cultural Resources Management Plan (ICRMP) does not depict any portion of the APE as requiring a Phase I or Phase II survey. No archaeological surveys have been done within the footprint of the softball field due to prior disturbances from grading when it was created in the 1980s. Archaeological investigations in 1999 north and southeast of the Alternative 2 site found the ground to be disturbed with no sites, supporting the conclusion that there is low or no archaeological potential in this area.

The Retelle Building, built in 1946, is within the Alternative 2 site boundary and APE; however, there would be no construction activities involving this building under Option A.

Option B

Under Option B, the Retelle Building would be renovated to create an ABA-compliant Comfort Station. The Retelle Building has been significantly modified from its original construction as a warehouse to meet the needs as a recreational facility. This includes a windowed addition for seating, a kitchen, and restrooms among other changes. The remainder of the effects under Option B would be similar to Option A.

In a letter dated June 12, 2025, the SHPO concurred with the Navy's findings that construction of a new RV Park under Alternative 2, Option A or B, would have no adverse effect on historic properties (Appendix B).

Summary

Since there are no architectural or archaeological resources within the APE, there would be no short-term or long-term effects on historic resources. Therefore, Alternative 2 (Option A and B) would not cause significant effects on cultural resources. The Navy consulted with the Maryland SHPO pursuant to Section 106 of the NHPA, and the SHPO concurred with the finding of no adverse effect for the implementation of the Proposed Action at either Alternative location (Appendix B).

3.5 Visual Resources

This discussion of visual resources includes the natural and built features of the landscape visible from public views that contribute to an area's visual quality. Visual perception is an important component of environmental quality that can be affected through changes created by various projects. Visual effects occur because of the relationship between people and the physical environment.

3.5.1 Affected Environment

North Severn Complex's modern buildings showcase its 20th-century townscape (NSA Annapolis, 2008). The Installation Appearance Plan (NSA Annapolis, 2008) provides specific design guidelines and standards to maintain the unique character of NSA Annapolis.

NSA Annapolis lacks distant viewsheds due to its mostly flat topography. There are, however, vistas over the Severn River and Chesapeake Bay. Views across the river provide a visual connection between the Upper and Lower Yards and North Severn Complex. The Alternative 1 and 2 sites are not near or within any vistas that connect the Upper and Lower Yards to the North Severn Complex, so these viewsheds are not considered further in this EA. Greenbury Point, on the eastern portion of North Severn, is a natural resources area that offers recreational opportunities alongside mission-supported development. It has four walking trails totaling 1.63 miles that are accessible to the public year-round, at the discretion of the Installation Commanding Officer (ICO), from sunrise to sunset when the small arms firing range is not in use. Possum Point is open to the public for fishing for those with a valid Maryland State Fishing License (Naval District Washington, 2024).

The Alternative 1 site, located on Possum Point, is an elevated parcel of relatively flat land. Because it was previously developed, it consists primarily of maintained grasses with a few scattered trees and is surrounded by denser trees. The Mill Creek Marina, including the dock and parking, is to the north and northwest of the site. Hooper High Road is directly west of the site, and a forested area is west of the roadway. Timberdoodle Loop, a 0.3-mile walking trail, is in the forested area just south of the Alternative 1 boundary. Immediately east of the Alternative 1 site is Whitehall Bay. An approximately 70-foot vegetative buffer (including trees and shrubs) exists between the project site boundary and the Mill Creek and Whitehall Bay shorelines.

The Alternative 2 site consists of maintained grass on a softball field along Kenwood Road and a forested area in the northern and northeastern portions. Trees extend to the east and north beyond the site boundary, reaching Church Road, Beach Road, and Kinkaid Road, and continuing farther. There is family housing approximately 600 feet north of the Alternative 2 site, on Eucalyptus Road, and family housing 600 feet southeast of the site along Kinkaid Road. The Retelle Building is at the southern end, bordering property owned by Annapolis Partners. The area directly east of the Alternative 2 boundary is forested, and the area to the west is natural open space and part of the existing RV Park.

3.5.2 Environmental Consequences

The evaluation of visual resources in the context of environmental analysis typically addresses the contrast between visible landscape elements. Collectively, these elements compose the aesthetic environment, or landscape character. The landscape character is compared to the Proposed Action's visual qualities to determine the compatibility or contrast resulting from the buildout activities associated with the Proposed Action.

3.5.2.1 No Action Alternative

Under the No Action Alternative, there would be no new RV Park and, thus, no change to existing conditions. Therefore, no significant effects would occur.

3.5.2.2 Alternative 1 Potential Effects

The study area for visual resources includes the Alternative 1 site on the elevated parcel of land at Possum Point and the surrounding area within a half-mile radius. This distance is based on the potential and reasonable visibility of the site, considering existing obstructions.

Alternative 1 would result in minor, short- and long-term effects on visual resources. In the short term, construction activities, including the use of large, heavy equipment, could temporarily affect the view of the Mill Creek Marina, Browns Cove, and Whitehall Bay from Beach Circle and Timberdoodle Trail. Construction activities might also temporarily affect the visual quality of Possum Point from views by boats in the marina, cove, and bay and by residences across Mill Creek. The Alternative 1 site would remain buffered by trees to the north, south, and east, limiting the view of construction by the public.

These same views would be affected by permanent infrastructure, including the Comfort Station, and the operation of the RV Park, which would involve the presence of RVs, other vehicles, tent campsites, and associated lighting. The Comfort Station would have nighttime outdoor lights for safety, and RVs and tent campsites could have artificial light. The RVs and campsites might be visible from Mill Creek Marina, Browns Cove, and a small portion of Whitehall Bay; and Timberdoodle Trail, which is 35 feet from the southern boundary of Alternative 1 at its closest point. However, the Alternative 1 site is surrounded by mature trees to the east and south of Beach Circle, west of Hooper High Road, and on the northern edge of the site (between the Alternative 1 site and Mill Creek Marina).

Because the Alternative 1 site previously housed the Bachelor's Enlisted Quarters, it is mostly open space. Although some trees would be removed, trees would be preserved to the maximum extent possible. Tree buffers would remain on three sides of the RV Park, providing a visual buffer to minimize the effect of construction and operation of the RV Park from Mill Creek Marina, Browns Cove, Whitehall Bay; Timberdoodle Trail; and from residences across the creek. Trees would also be planted on the site to the maximum extent practicable. The site would be more visible in the winter, when deciduous trees lose their leaves; however, fewer RV patrons would be expected during winter months which would reduce the visibility of RVs from outside the site. Safety lighting at the Comfort Station would be on nightly when the RV Park is in operation. Low-output LED lights would be present on individual power pedestals at the RV sites. During the design of the RV Park, minimization of light pollution would be included as a lighting design consideration to reduce the effect of lighting on surrounding views and residents at night, using guidance from USFWS and DarkSky International lighting resources (USFWS, n.d.; DarkSky International, 2024). Additionally, proper light installation and management would reduce effects on bats, pollinators, and other local wildlife.

The RV Park at the Alternative 1 site would be most visible from vehicles using Beach Circle to enter and exit the RV Park and vehicles traveling to and from the Mill Creek Marina on Hooper High Road. Approximately 200 feet of Hooper High Road would border the Alternative 1 site. Passengers in a vehicle traveling along Hooper High Road at 15 miles per hour would be exposed to the RV Park for about 9 seconds before it would be partially or completely out of view.

For RV Park patrons, the Possum Point location provides proximity to scenic views of Mill Creek and Whitehall Bay. Trees would remain on the north, south, and west of the Alternative 1 site, preserving a natural environment setting.

The proposed RV Park would not be visible from most of Greenbury Point. While it would be visible to those using Timberdoodle Trail, the marina, and Possum Point, the proposed Park is compatible with the land use designation at this site—Community Support—and the Navy's future land use vision to enhance MWR uses on Greenbury Point.

Summary

Alternative 1 would result in short- and long-term, minor effects on visual resources. Construction activities would temporarily affect the visual quality of the surrounding areas. The long-term presence of RVs, campsites, and permanent infrastructure and lighting would have a lasting visual effect. However, effects would be minimized by the existing mature trees that surround the site and planting new vegetation. Thus, long-term effects would be minor. Alternative 1 would not result in significant effects on visual resources.

3.5.2.3 Alternative 2 Potential Effects

The study area for visual resources includes the proposed Alternative 2 site on the North Severn Complex and the surrounding area within a half-mile radius. This distance is based on the potential and reasonable visibility of the site, considering existing obstructions.

Alternative 2 would result in short- and long-term, minor effects on visual resources. Effects would be similar to those described under Alternative 1; however, the site would not be as visible to the general public. Construction activities, including the use of large, heavy equipment, would temporarily affect the visual quality of the area as seen from Beach Road, Kenwood Road, and buildings on the Annapolis Partners Property. A tree buffer would remain to the north and east of the Alternative 2 site, minimizing visual effects from Kinkaid Road and Church Road.

The RV Park would be visible from Beach Road, Kenwood Road, and buildings on the Annapolis Partners Property. However, the Alternative 2 site is surrounded by mature trees on the northern and eastern borders, and west of Kenwood Road. Although some trees would be cleared so that the slopes on the northern portion of the site could be graded, overall trees would be preserved to the maximum extent possible. The Navy would consider light minimization measures in its design for the Comfort Station's overnight lighting to minimize light pollution, reducing the effect of RV Park lighting on surrounding views.

The proposed RV Park would be most visible from the Annapolis Partners Property, which borders the southern portion. The Park would also be visible from vehicles using Kenwood Road to enter and exit the RV Park, and from portions of Beach Road. The proposed RV Park would be partially hidden from adjacent views. Therefore, Alternative 2 would not significantly degrade the visual character of the area.

For RV Park patrons, the visual setting of the Alternative 2 site is lower quality compared to the Alternative 1 site. While there are dense trees to the north and east of the site, and scattered trees to the west of the site, the site does not offer proximity or views of the Severn River or Woolchurch Pond. To the south, the RV Park would view industrial-looking buildings on the Annapolis Partners Property. The Navy would re-plant trees and other vegetation on the site to maintain and enhance the natural setting, where possible, which could include a vegetated buffer along the southern boundary of the site.

Option A

Under Option A, the Retelle Building would not be renovated. The building, which is considered in poor condition, would remain on the site as-is. The new Comfort Station would be built in accordance with the Installation Appearance Plan to be visually compatible with the surrounding area.

Option B

The existing Retelle Building would be renovated for use as the Comfort Station. The renovation would adhere to the Installation Appearance Plan, and overnight lighting could be designed to minimize light pollution. The renovation of the Retelle Building would enhance the visual character of the site through improvement of a building that is currently in poor condition. Thus, Option B would have slightly fewer visual effects than Option A.

Summary

Alternative 2 would have short- and long-term, minor effects on visual resources under Option A and B. Effects would be similar to Alternative 1, but the Alternative 2 site would be less visible to the public. The visual setting for patrons would be lower quality at the Alternative 2 site than Alternative 1. Although both options would have similar long-term effects, Option B would have slightly fewer visual effects due to the renovation of the Retelle Building. Alternative 2 would not result in significant effects on visual resources.

3.6 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

Species diversity and ecological function are correlated with habitat area. Habitat loss, degradation, fragmentation, disturbance, and pollution are all considered primary threats to species conservation (Maryland DNR, 2005). Habitat destruction and fragmentation are the main threats to biodiversity (Reaka-Kudla, Wilson, & Wilson, 1997).

Within this EA, biological resources are divided into two major categories: (1) terrestrial vegetation and (2) terrestrial wildlife.

The Proposed Action would not involve any in-water work and neither action alternative is sited within 100 feet of the shoreline; therefore, there would be no direct effects on marine wildlife. Potential effects on water quality that could affect marine wildlife would be minimized through stormwater pollution prevention BMPs, a requirement under NPDES, which would protect against soil erosion and sedimentation going into receiving water bodies (discussed in more detail in Section 3.2.2). Therefore, marine wildlife is not analyzed in this EA. There is no documented submerged aquatic vegetation (SAV)

in Mill Creek or near the shorelines of Greenbury Point or the North Severn Complex (VIMS, 2024). The clarity of Mill Creek is poor, meaning that the creek is generally not well-suited for SAV growth, which would require sunlight to penetrate deeply into the water column (Severn River Association, 2020). Therefore, marine vegetation is not analyzed further in this EA.

3.6.1 Affected Environment

This section describes the existing conditions for terrestrial vegetation and wildlife at North Severn Complex. Threatened, endangered, and other special-status species are discussed in more detail in Section 3.6.1.4.

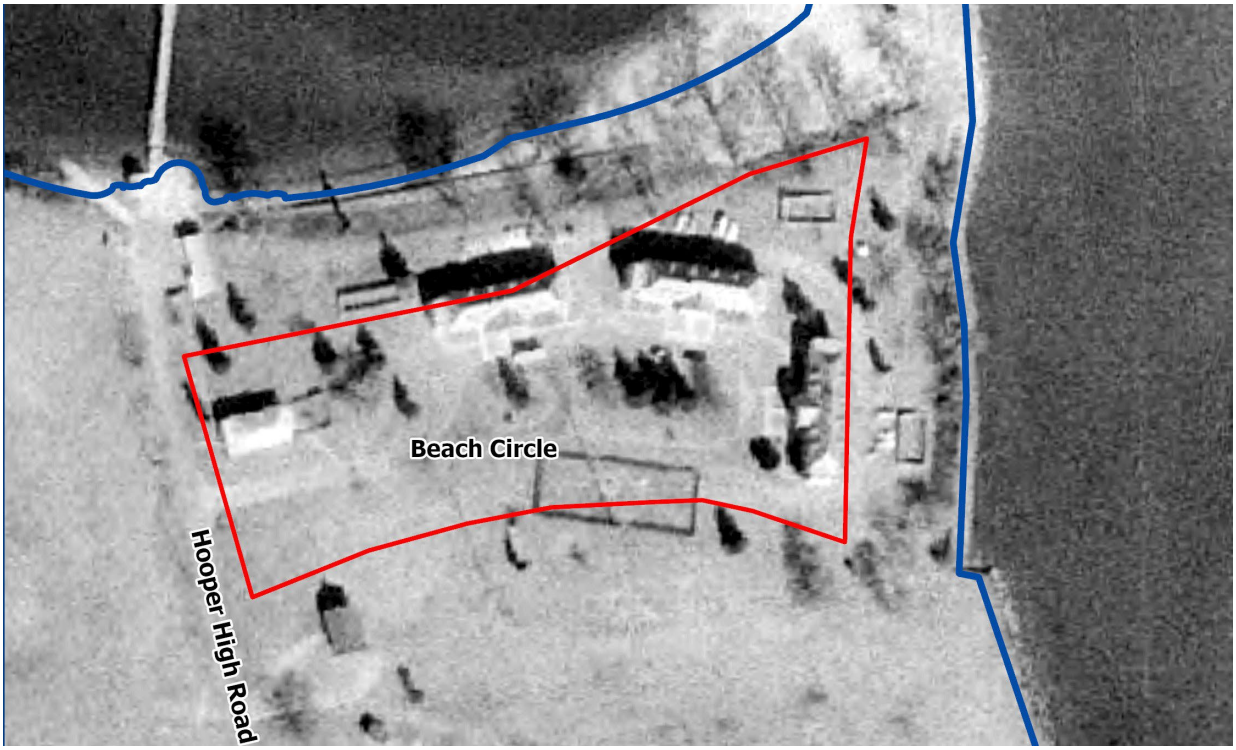
3.6.1.1 Terrestrial Vegetation

The North Severn Complex consists of mixed hardwood forests, pine forests, early successional (or young/not mature) forests, grasslands, wetlands (tidal and non-tidal), and landscaped land. More than 400 acres of the North Severn Complex consist of forests, woodlands, or semi-natural areas with trees and shrubs. Due to the history of North Severn Complex, the forest and woodland areas vary from immature open stands with dense understories to mature forests with closed canopies and little understory or ground cover. Forested areas range in size from isolated stands of trees to stands up to 80 acres.

The Alternative 1 site primarily consists of maintained, mowed grass. The center of the site contains several large ornamental, non-native tree species, including Bradford pear (*Pyrus calleryana*) and a cedar species. These ornamental species are the result of the site's previous development (see Figure 3-10). The southern boundary of the Alternative 1 site is part of a larger forested area composed of hardwood trees. To the north and east are more hardwood trees, which serve as a buffer between the site and the shoreline. The Alternative 1 site is highly disturbed from prior development. There are extensive invasive and nuisance species present along the edge of the tree buffers including English ivy, poison ivy, multiflora rose, wineberry, and bittersweet. Invasive and nuisance species are also present on the scattered interior trees. There is extensive milkweed present on Greenbury Point but no milkweed has been regularly observed in the Alternative 1 project area.

The Alternative 2 site consists of maintained, mowed grass on the softball field area and a forested area in the northern portion. The forest is primarily deciduous hardwood trees. American holly (*Ilex opaca*), American beech (*Fagus grandifolia*), pin oak (*Quercus palustris*), and white oak (*Quercus alba*) are present. Tulip poplars (*Liriodendron tulipifera*), in good condition, are along the Beach Road access road. The edge of the forest adjacent to the softball field contains extensive invasive and nuisance species including English ivy, poison ivy, bittersweet, and Virginia creeper. Many of the visible trees near this edge are in poor condition due to the extensive invasive species; however, extensive invasive species are absent in the interior of the forested area. No milkweed has been regularly observed on the Alternative 2 project area.

Figure 3-10. 1970 Aerial of Alternative 1 Site



No federally listed threatened, endangered, or candidate plant species occur on NSA Annapolis (NAVFAC Washington, 2025). Rare, threatened, or endangered plant surveys conducted on NSA Annapolis in 1996 and 2017 identified four state-rare plant species on the installation. Two of the species—broad-fruited bur-reed (*Sparganium eurycarpum*) and grass-leaved arrowhead (*Sagittaria graminea*)—were observed in 1996 but were not found during the 2017 survey and determined no longer present on the installation.

Neither of the two other state-rare species—Carolina milkvine or anglepod (*Matelea carolinensis*) and Lancaster's sedge (*Cyperus lancastriensis*)—were observed on or near the alternative sites. During the scoping period for this EA, the Navy received a letter from the MDNR stating that the Wildlife and Heritage Service has no official records for state-listed candidate, proposed, or rare plant species within the Alternative 1 or Alternative 2 sites (correspondence included in Appendix B). Therefore, no state-listed plant species are present at the Alternative 1 or Alternative 2 sites, and they are not analyzed further in the EA. The Navy coordinated with MDNR during the public review of this EA.

3.6.1.2 Terrestrial Wildlife

Terrestrial wildlife includes all animal species (i.e., insects and other invertebrates, freshwater fish, amphibians, reptiles, birds, and mammals) focusing on the species and habitat features of greatest importance or interest. Because neither Alternative site 1 or 2 contain surface water, freshwater fish and amphibians are not expected to be present and are, therefore, not analyzed further.

Reptiles

Several common species of turtles and snakes are found on the North Severn Complex, including the common snapping turtle (*Chelydra serpentina*), northern diamondback terrapin (*Malaclemys terrapin*),

eastern mud turtle (*Kinosternon subrubrum*), eastern painted turtle (*Chrysemys picta*), eastern box turtle (*Terrapene carolina*), eastern worm snake (*Carphophis amoenus*), northern black racer (*Coluber constrictor*), black rat snake (*Elaphe obsoleta*), northern water snake (*Nerodia sipedon*), and eastern garter snake (*Thamnophis sirtalis*) (NAVFAC Washington, 2016).

Mammals

General observations of mammals on the North Severn Complex include white-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), Virginia opossum (*Didelphis virginiana*), gray fox (*Urocyon cinereoargenteus*), and red fox (*Vulpes vulpes*). Small mammals include short-tailed shrew (*Blarina brevicauda*), eastern mole (*Scalopus aquaticus*), meadow vole (*Microtus pennsylvanicus*), and house mouse (*Mus musculus*) (NAVFAC Washington, 2025).

An acoustic survey for bats conducted in May 2016 documented the following bat species at NSA Annapolis: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), silver-haired bat (*Lasionycteris noctivagans*), evening bat (*Nycticeius humeralis*), and hoary bat (*Lasiurus cinereus*) (NAVFAC Washington, 2017). An acoustic bat survey conducted in June 2019 also documented little brown bat (*Myotis lucifugus*) at NSA Annapolis (NAVFAC Washington, 2020a).

Birds

More than 150 bird species have been documented at North Severn Complex and the adjacent waterbodies, including songbirds, shorebirds, wading birds, waterfowl, and raptors. The marshes and shoreline of the North Severn Complex provide habitat for shorebirds and wading birds including several gull species, the great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and green heron (*Butorides virescens*); and red-winged blackbirds (*Agelaius phoeniceus*). Osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocehalus*), forest interior dwelling species (FIDS), and waterfowl are common in the region.

The Alternative 2 site is within an area mapped by the State of Maryland as potential habitat for FIDS (Maryland iMAP Data Catalog, 2017). The forested area at the Alternative 2 site is not part of a large, contiguous forest, but it could provide edge habitat to FIDS species on the installation.

A list of federally protected bird species potentially present within the project area was obtained from the USFWS through their Information for Planning and Consultation (IPaC) tool, which includes migratory birds that occur on the USFWS Birds of Conservation Concern list or protected under the Bald and Golden Eagle Protection Act. These bird species are listed in Table 3-12.

Of the migratory bird species listed in Table 3-12, the following have been observed at North Severn Complex: bald eagle (non-nesting), bobolink, chimney swift, grasshopper sparrow, least tern, lesser yellowlegs, prairie warbler, scarlet tanager, dowitcher, and wood thrush (NAVFAC Washington, 2025; NAVFAC Washington, 2018d). Other birds of conservation concern found at the North Severn Complex include pied-billed grebe (*Podilymbus Podiceps*), horned-grebe (*Podiceps auritus*), red-throated loon (*Gavia stellata*), snowy egret (*Egretta thula*), and short-eared owl (*Asio flammeus*) (NAVFAC Washington, 2025).

A survey for avian species listed under the Endangered Species Act (ESA) and state-listed species was conducted from 2017–2018 across all of NSA Annapolis. No federally listed bird species were observed during this survey, nor have any been observed on the installation previously (NAVFAC Washington,

2018d; NAVFAC Washington, 2025). No state-listed bird species were observed during the 2017–2018 avian survey (NAVFAC Washington, 2018d).

Table 3-12 Migratory Birds with Potential to Occur in Alternative 1 and 2 Areas

Common Name	*Scientific Name*	*Potential Breeding in Study Area?*
American oystercatcher	*Haematopus palliatus*	Apr 15–Aug 31
Bald eagle	*Haliaeetus leucocephalus*	Oct 15–Aug 31
Black skimmer	*Rynchops niger*	May 20–Sep 15
Black-billed cuckoo	*Coccyzus erythropthalmus*	May 15–Oct 10
Blue-winged warbler	*Vermivora cyanoptera*	May 1–Jun 30
Bobolink	*Dolichonyx oryzivorus*	May 20–Jul 31
Canada warbler	*Cardellina canadensis*	May 20–Aug 10
Chimney swift	*Chaetura pelagica*	Mar 15–Aug 25
Golden eagle	*Aquila chrysaetos*	Breeds elsewhere
Grasshopper sparrow	*Ammodramus savannarum perpallidus*	Jun 1–Aug 20
Kentucky warbler	*Geothlypis formosa*	Apr 20–Aug 20
King rail	*Rallus elegans*	May 1–Sep 5
Least tern	*Sternula antillarum antillarum*	Apr 25–Sep 5
Lesser yellowlegs	*Tringa flavipes*	Breeds elsewhere
Pectoral sandpiper	*Calidris melanotos*	Breeds elsewhere
Prairie warbler	*Setophaga discolor*	May 1–Jul 31
Prothonotary warbler	*Protonotaria citrea*	Apr 1–Jul 31
Purple sandpiper	*Calidris maritima*	Breeds elsewhere
Red-headed woodpecker	*Melanerpes erythrocephalus*	May 10–Sep 10
Ruddy turnstone	*Arenaria interpres morinella*	Breeds elsewhere
Rusty blackbird	*Euphagus carolinus*	Breeds elsewhere
Saltmarsh sparrow	*Ammospiza caudacuta*	May 15–Sep 5
Scarlet tanager	*Piranga olivacea*	May 10–Aug 10
Semipalmated sandpiper	*Calidris pusilla*	Breeds elsewhere
Short-billed dowitcher	*Limnodromus griseus*	Breeds elsewhere
Whimbrel	*Numenius phaeopus hudsonicus*	Breeds elsewhere
Willet	*Tringa semipalmata*	Apr 20–Aug 5
Wood thrush	*Hylocichla mustelina*	May 10–Aug 31

Source: (USFWS, 2025)

Insects

A pollinator survey conducted on Greenbury Point in 2019 identified 37 species of butterflies and 19 species of bees. The most commonly occurring butterflies include the orange sulphur (*Colias eurytheme*), clouded sulphur (*Colias philodice*), common buckeye (*Junonia coenia*), cabbage white (*Pieris rapae*), and monarch butterfly (*Danaus plexippus*). No rare, threatened, or endangered bee species were detected during the 2019 pollinator survey (NAVFAC Washington, 2020b). It is likely that similar insect species would be present at both Alternative 1 and Alternative 2 sites as transient species.

3.6.1.3 Threatened, Endangered, and Special-Status Species

A list of federally protected species potentially present within the project areas (Alternative 1 and Alternative 2 footprints) was obtained from the USFWS through their IPaC tool and is shown in Table 3-13. There are no critical habitats within the action alternative areas (USFWS, 2025).

Table 3-13 Threatened and Endangered Species with Potential to Occur in the Study Area

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status*	*Critical Habitat Present?*
Tricolored bat	*Perimyotis subflavus*	PE	NL	No
Monarch butterfly	*Danaus plexippus*	PT	NL	No

Source: (USFWS, 2025)
Key: NL = not listed, PE = proposed for listing as endangered under the ESA, PT = proposed for listing as threatened under the ESA, ST = state threatened.

The tricolored bat (proposed for listing as endangered under the ESA) was listed as potentially occurring at the two alternative sites (USFWS, 2025). As discussed under Section 3.6.1.2, Terrestrial Wildlife, tricolored bat has not been documented on NSA Annapolis during multiple acoustic and mist-net bat surveys that were conducted at the installation (NAVFAC Washington, 2017; 2020a); however, in accordance with USFWS guidelines, additional surveys would be needed to confirm probable absence for this species. If present, tricolored bat would only utilize the North Severn Complex during the summer, as they would likely hibernate during the winter in caves or abandoned mines. Tricolored bats often feed over forests, wetlands, and open water. During the summer, tricolored bats are found in forested habitats where they prefer roosting in tree foliage. Occasionally, tricolored bats may be found in manmade structures (USFWS, 2024b; USFWS, 2024c). Current natural resources management at NSA Annapolis includes regular monitoring of bat species when funding allows, maintaining dead tree "snags" in place to provide roosting, and minimizing impacts to forests and wetlands that support habitat (NAVFAC Washington, 2025).

Monarch butterfly was also listed on the IPaC report as having potential to be present within both action alternative sites. A pollinator survey conducted on the North Severn Complex in 2019 observed an abundant monarch butterfly population during spring and early fall survey periods and areas of high milkweed density on Greenbury Point (NAVFAC Washington, 2020b). The two alternative sites are outside of the primary Greenbury Point habitat areas. While the existing habitats at both alternative sites (open grass area with full sunlight) provide good conditions for milkweed, no milkweed has been regularly observed at either site. Monarch butterflies might be transient through these locations, but because of the lack of monarch butterfly host plants, monarch eggs and caterpillars are not expected to be present.

During the scoping period for this EA, the Navy received a letter from the MDNR (Appendix B) stating that the Wildlife and Heritage Service has no official records for state-listed candidate, proposed, or rare plant or animal species within the two alternative sites. The Navy coordinated with MDNR during the public review for the draft of this EA.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to existing biological resources. No significant effects on biological resources would occur.

3.6.2.2 Alternative 1 Potential Effects

Terrestrial Vegetation

The Alternative 1 site does not contain environmentally sensitive areas or habitat protection areas. The Alternative 1 site is primarily maintained, mowed grass. Some of the mature interior trees would be removed (up to 20 trees), as well as up to 0.5 acres of the forest on the southern boundary. The Navy would retain trees to the greatest extent possible, which would be determined based on the final site designs. As described in Section 3.6.1.1, the mature interior trees are mostly non-native species. The Navy would retain the large tree in the northeast area of the site, if possible, to preserve the beauty of the site, its shade properties. There are extensive invasive plant species present on and around the Alternative 1 site (described in Section 3.6.1.1). Any invasive or nuisance plant species removed during site preparation and construction would provide a net benefit to the vegetation at the site. The NSA Annapolis Natural Resources program conducts invasive species management in accordance with the INRMP, using a multi-pronged method for invasive monitoring and control. A variety of methods can be applied for removal and/or control, and then the appropriate native species are planted to reduce the chance of invasive species reestablishment (NAVFAC Washington, 2025).

Ground disturbance could result in the establishment of invasive species at the site. Invasive species take advantage of soil disturbance; the risk would persist temporarily until proper revegetation and landscaping of the disturbed soils with appropriate plant species takes place. This effect would be minimized through revegetation with native plant species and monitoring by the NSA Annapolis natural resources program.

The loss of trees at the Alternative 1 site would have a minor effect on the overall setting at Possum Point due to a minor decrease in existing shade and vegetative habitat. However, the overall effect on vegetation on the installation would be minor; the site is mostly maintained, mowed grass and only a small number of trees and native habitat would be removed.

Long-term use of the proposed RV Park is not expected to have significant effects on the native terrestrial vegetation at the site because camping is a non-consumptive use of natural resources that would not severely affect the vegetation.

Terrestrial Wildlife

Habitat Loss

Habitat loss occurs when construction projects intrude or alter the natural habitats of animals, forcing them to relocate or adapt to new conditions. Because the site is primarily mowed grass, there is not extensive habitat for wildlife or insect species. The Alternative 1 site is not likely to serve as a wildlife habitat corridor to adjacent waterways due to its lack of protective tree cover and thus its openness to wildlife or insect predation. As previously described, interior trees and a small, forested area along the southern site boundary would be removed, resulting in long-term habitat loss. New trees would be planted on the site to the extent possible. Similar, forested habitat exists immediately adjacent to the study area and the overall effects on wildlife and insects would be minor.

USFWS recommends that tree clearing be avoided from April 1 through September 30 to minimize effects on birds and bats. New planted vegetation at the site would consist of native species, and pollinator-friendly species whenever possible, which would enhance bird and insect habitat at the site.

Pets are permitted at the existing RV Park and are commonly present at the site identified for Alternative 1 because there is a dog park nearby. Pets would be allowed at the proposed RV Park, in accordance with RV Park guidelines. Pets are registered by patrons at check-in with all veterinary records. Pets are required to be leashed and supervised at all times. Pet waste pickup is required, and dog waste trash receptacles would be provided at the site. Pets would not introduce a new or significant risk to wildlife and insects at the site

Noise

Noise and disturbance from construction equipment could affect wildlife, though these effects would be intermittent, short-term, and minor. See Section 3.8, Noise, for further detail. During operation of the RV Park, it is likely that most wildlife would avoid the site due to human presence. Wildlife acclimated to human presence would likely remain, such as birds and squirrels. The RV Park would have quiet hours from 10:00 p.m. to 7:00 a.m. in accordance with county noise ordinances, minimizing nighttime noise at the site. There would be adequate electrical service at each RV site, so long-term or overnight use of generators would not be expected to contribute to noise effects that could disturb wildlife. The effect of noise on wildlife would be minor.

Air Pollution

Air pollution could adversely affect wildlife. Construction activities would affect air quality in the short term by emitting pollutants. After construction, the additional RVs would contribute slightly to air pollutants in the long term. There would be a slight increase in vehicle traffic to the new RV site, and associated vehicle emissions are expected. No emissions are expected from generator use at the site, because there would be electrical service for each RV. Air quality effects overall would be minor and well below the threshold of significance in the area (see Section 3.1, Air Quality). Additional pollutants could affect wildlife within the study area, but these effects would be minor.

Light Pollution

Light pollution could adversely affect migratory birds and bats. Migratory birds can be attracted to light, which can cause disorientation affecting their ability to migrate (USFWS, 2022). Artificial light can disrupt or deter nocturnal species, such as bats. In particular, the big brown bat and little brown bat might be more deterred by artificial light (Phys.org, 2021). Modern yellow lights increase bats' vulnerability to owl predation; thus, bats avoid lit areas (Taylor & Tuttle, 2019). The proposed RV Park would include overnight safety lighting. In addition, RVs would produce some artificial light, the amount and times of which would vary based on each patron. Additional artificial light could affect nearby migratory birds and bats from the loss of dark sky.

During the design of the RV Park, there would be a design consideration for the lighting of the site to incorporate light pollution minimization measures. The measures would consider guidance from USFWS and DarkSky International lighting resources (USFWS, n.d.; DarkSky International, 2024). One such measure could include lighting shields, which can direct light towards the ground and minimize glare upward into the night sky. Other bird- and bat-conscious lighting practices include keeping lighting as low to the ground as possible and only illuminating necessary structures (USFWS, n.d.). Bluish artificial light could be avoided to reduce adverse effects (DarkSky International, 2024; USFWS, n.d.). Some research suggests that bats can perceive *red* LED lighting as darkness, and the use of "warmer" light tones is less likely to trigger a behavioral response (Taylor & Tuttle, 2019; USFWS, n.d.). Non-bluish shielded LED lighting using the lowest wattage required could be installed to minimize adverse effects on migratory birds and bats.

Litter

During operation of the RV Park, solid waste generated by patrons would increase, which increases the risk of litter. Dumpsters could be an attractant to raccoons, possums, or other animals. Long-term effects on wildlife from litter, such as ingestion or entanglement, could occur. However, solid waste management facilities at the RV Park would include easily accessible dumpster and recycling receptacles, and signage to remind patrons to properly dispose of trash. The dumpster collection point would be sited to minimize the impacts of any "misses" by patrons. The use of a singular dumpster would also limit the potential of debris being spread at multiple or uncovered trash receptacles. Regular waste pickup would prevent overflow of trash and recycling receptacles. Trees would remain around most of the perimeter of the site, providing a protective buffer between the RV Park site and the surrounding waterways. This would help to minimize potential effects on local wildlife.

Threatened, Endangered, and Special-Status Species

There are no threatened or endangered species present on NSA Annapolis or known to occur at the Alternative 1 site, although suitable habitat might exist for the tricolored bat within the forested area.

While the tricolored bat is proposed to be listed as endangered, it is expected to be officially listed when this project is executed in the future. Consequently, the Navy coordinated with USFWS and MDNR under the assumption that the tricolored is listed as endangered at the time of project execution. The Navy completed a Tricolored Bat Range-wide Determination Key through the USFWS's online IPaC tool, which resulted in a "may affect" determination for the tricolored bat (included in Appendix B). During the scoping period, the USFWS provided the Navy with conservation measures to consider which would support bird and bat species, which are incorporated in this EA. Up to 0.5 acres of forest may be removed under Alternative 1. Tree-cutting restrictions may be in place between April 1 and September 30 to avoid effects on any tricolored bats that could be roosting in the area during the active season. During the design of the RV Park, there would be a design consideration for the lighting of the site to incorporate light pollution minimization measures, which would further limit lighting effects on bats present within the project area. For these reasons, the Navy believes that a "may affect, not likely to adversely affect" is more accurate for the tricolored bat.

Monarch butterfly is present on Greenbury Point, but milkweed has not been regularly observed at the Alternative 1 site. There would be no significant conversion of suitable grassland/pollinator habitat during the construction of Alternative 1. Monarch butterflies can be transient through this location, but because of the lack of monarch butterfly host plants, monarch eggs and caterpillars are not expected to be present.

The Navy coordinated with the USFWS Chesapeake Bay Field Office, which concurred with the Navy's determination of "not likely to adversely affect" the tricolored bat and monarch butterfly. Should either of these proposed species become listed as threatened or endangered under the Endangered Species Act prior to implementation of the Proposed Action, the Navy would further coordinate with the USFWS to again adopt this concurrence under an updated listing.

As described in Section 3.6.1.2, migratory birds frequent the Chesapeake Bay and Annapolis region. Effects on migratory birds would be the same as what is described under *Terrestrial Wildlife*. Alternative 1 would not be expected to result in any take of migratory bird as prohibited under the Migratory Bird Treaty Act.

Bald eagles have been observed foraging and flying over nearby coastal waters, but there are no bald eagle nests on NSA Annapolis; the closest nests are approximately 2 miles away from the Alternative 1 site. Ospreys are also present in the area, with multiple nests throughout Greenbury Point. No osprey nests are on the Alternative 1 site. The proposed RV Park would not be expected to disturb foraging eagles or osprey that might be in the vicinity of Alternative 1.

MDNR Wildlife and Heritage Service responded during the scoping period that there are no official records for state or federal listed candidate, proposed, or rare plant or animal species within the project areas, and as a result they have no specific concerns regarding potential effects on such species (Appendix B).

Summary

Alternative 1 would cause short- and long-term, minor effects to biological resources. However, the loss of forested habitat would be minimal. There would be long-term increases in human activity at the site that could affect wildlife and insects through noise, air quality, litter, and light; however, BMPs would minimize the effects. There would be no significant effects on threatened and endangered species. The Navy coordinated with USFWS and MDNR. USFWS concurred that the Proposed Action resulted in a "not likely to adversely affect" the tricolored bat and monarch butterfly based on the conservation methods identified and fact that minimal tree clearing would occur. MDNR stated that there are no official records for state or federal listed candidate, proposed, or rare plant or animal species within the project areas. Alternative 1 would not have significant effects on biological resources.

3.6.2.3 Alternative 2 Potential Effects

Under Alternative 2, Option A and Option B would have similar effects on biological resources; thus, the following analysis represents both options.

Terrestrial Vegetation

Under Alternative 2, direct and indirect effects would occur to terrestrial vegetation, including removal of vegetation, conversion to paved surfaces, and increased risk for invasive species during construction. Effects would be similar to those described under Alternative 1 (see Section 3.6.2.2) but to a greater extent due to the larger amount of tree removal, as summarized below.

Due to the slope of the northern, forested portion of the Alternative 2 site, site grading would be needed to accommodate the RV Park, which would require most of the trees to be cleared. The Navy would retain trees to the greatest extent possible to maintain the natural setting of the campground and for visual buffering; however, up to 1.9 acres of trees might need to be cleared, depending on the final site design and grading requirements.

The removal of extensive invasive species at the edge of the forested area would result in a benefit on the vegetation at the site. A temporary increased risk of invasive species from ground disturbance would be minimized through revegetation with native plant species and monitoring by the NSA Annapolis natural resources program.

Long-term use of the proposed RV Park is not expected to have significant effects on the native terrestrial vegetation at the site because camping is a non-consumptive use of natural resources that would not severely affect the vegetation.

Terrestrial Wildlife

Under Alternative 2, minor, direct effects on wildlife and insects would be expected in the project area from habitat loss, noise and air pollution, and potential effects from artificial lighting and litter. Effects from noise, air pollution, artificial lighting, and litter would be the same as those described under Alternative 1 (Section 3.6.2.2), except where summarized below.

Effects on wildlife would be greater under Alternative 2 due to the higher amount of forested habitat removed, removal of higher quality habitat, and habitat fragmentation. The loss of the forested habitat could affect wildlife movement from a neighboring forested area to the densely forested area around Woolchurch Pond. However, this effect would be minor because some existing fragmentation (small roads) already exists between the Alternative 2 site and Woolchurch Pond.

As described in Section 3.6.1.2, the forested area at the Alternative 2 site is potential habitat for FIDS, as mapped by the State of Maryland. The size of the forested habitat (less than 300 feet wide) would be considered edge habitat for FIDS, and not interior forest habitat (Critical Area Commission, 2000). The loss of this forested area would not significantly alter the designated FIDS habitat, because the surrounding area and forest are also not considered interior habitat.

Threatened, Endangered, and Special-Status Species

Effects on threatened, endangered, and special-status species would be the same as Alternative 1. There are no threatened or endangered species present on NSA Annapolis or known to occur at the Alternative 2 site. While tricolored bat has not been observed on NSA Annapolis, potential habitat is present at the Alternative 2 site. Up to 1.9 acres of forest may be removed under Alternative 2. Alternative 2 would incorporate the same considerations for tricolored bat as described under Alternative 1, including potential tree-cutting restrictions between April 1 and September 30 and design considerations to incorporate light pollution minimization measures. For these reasons, the Navy believes Alternative 2 “may affect, not likely to adversely affect” the tricolored bat. Monarch butterflies may be transient through the Alternative 2 site, but because of the lack of monarch butterfly host plants, monarch eggs and caterpillars are not expected to be present. The Navy coordinated with USFWS and MDNR. USFWS concurred that the Proposed Action resulted in a “not likely to adversely affect” the tricolored bat and monarch butterfly based on the conservation methods identified and fact that minimal tree clearing would occur.

MDNR Wildlife and Heritage Service responded during the scoping period that there are no official records for state or federal listed candidate, proposed, or rare plant or animal species within the project areas, and, as a result, they have no specific concerns regarding potential effects on such species (Appendix B).

Migratory birds could be affected by noise and light under Alternative 2, but to a lesser extent than Alternative 1 because the Alternative 2 site is farther inland on the installation with urban land uses nearby. Alternative 2 would not be expected to result in any take of migratory bird as prohibited under the Migratory Bird Treaty Act. Alternative 2 would not be expected to disturb foraging eagles or ospreys that might be in the vicinity of Alternative 2.

Summary

Alternative 2 would cause short-and long-term, minor effects to biological resources. Effects on wildlife and habitat would be greater under Alternative 2, as compared to Alternative 1. Long-term increases in

human activity at the site could affect wildlife similar to Alternative 1, but BMPs would minimize the effects. However, the long-term loss of habitat of the forested area would be greater under Alternative 2. There would be no significant effects on threatened and endangered species or other biological resources.

3.7 Land Use

Land use includes current and planned uses and the regulations, policies, or zoning that control the proposed land use. Land use refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. The meanings of various land use descriptions, labels, and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. A wide variety of land use categories resulting from human activity include residential, commercial, industrial, agricultural, institutional, and recreational.

3.7.1 Affected Environment

The following discussion describes the existing conditions for land use and land use compatibility for the Proposed Action. The affected environment for land use is characterized within the installation boundary. The affected environment considers local and regional development plans and other planning programs to characterize adjacent land use.

The NSA Annapolis Installation Development Plan (IDP) establishes Framework Plans that provide functional and geographic perspective for long-term development based on mission-specific requirements. These represent optimal arrangement of functional land use areas, planning districts, and tenant focus areas, which can accommodate existing facilities, program needs, and long-range development requirements (NAVFAC Washington, 2018a). The Framework Plan for NSA Annapolis is divided into seven planning districts: Lower Yard, Upper Yard, Housing, Industrial, NSA Annapolis Support, Training and Recreation, and Greenbury Point. Three of these planning districts, Upper Yard, NSAA Support, and Greenbury Point, have associated area development plans (ADPs) that provide further guidance for future development based on specific land use goals and objectives (NAVFAC Washington, 2018a).

The NSA Annapolis IDP identifies developable and non-developable areas based on site conditions and potential constraints. This classification informs future project locations and identifies the level of anticipated mitigation and overall construction costs. The three “developable area” classifications are *Developable* (54 acres, 5 percent of the installation), *Mitigation Required* (672 acres, 57 percent of the installation), and *Highly Constrained* (446 acres, 38 percent of the installation). *Developable* areas are those with minimal constraints and indicate development opportunities associated with re-use and recapitalization of existing facilities. *Mitigation Required* areas typically include existing buildings, infrastructure, and hardscapes; and areas set aside for conservation and environmental mitigation to offset development in other areas of the installation. *Highly Constrained* areas are characterized by flood zones, danger zones associated with explosive safety and small arms ranges, and contaminated areas within Installation Restoration Sites (NAVFAC Washington, 2018a).

Anti-terrorism and Force Protection (AT/FP) measures are a critical component of land use required by Navy facilities criteria to establish minimum levels of protection against terrorist attacks for occupants of DoD facilities (United Facilities Criteria [UFC] 4-010-01). The NSA Annapolis IDP notes that all development projects must be evaluated for exceptions to UFC 4-010-01 on a case-by-case basis by the

Naval Facilities Engineering Systems Command (NAVFAC) Capital Improvements AT/FP point of contact in conjunction with installation stakeholders (NAVFAC Washington, 2018a).

Overall, the NSA Annapolis IDP concludes that land uses at the installation are generally compatible with adjacent land uses, with a few exceptions. On Greenbury Point, an exception includes maintenance and storage areas adjacent to Family and Sailor Support areas (NAVFAC Washington, 2018a).

The Anne Arundel County Plan 2040 (Plan 2040) sets the policy framework for land use planning within the communities surrounding NSA Annapolis (Anne Arundel County, 2021). Land adjacent to the North Severn Complex is classified as low-density residential development (1–2 units per acre) and rural (agriculture and low-density housing, less than 1 unit per 5 acres). Plan 2040 establishes Development Policy Areas that broadly identify areas for development, redevelopment, and areas where rural or suburban and natural features should be prioritized. North Severn Complex is within the Peninsula Policy Area that promotes the protection of shorelines and adjacent infrastructure. The lands immediately to the north of North Severn Complex lie within the Neighborhood Preservation Policy Area where development is limited to infill and must be compatible with existing neighborhood character.

Resource Sensitive Policy Areas established by Plan 2040 identify features of special concern or significance that are prioritized for conservation and preservation with limits and prohibitions on certain land uses. To the north of the installation, outside of the installation boundary, is a Limited Development Critical Area, as established by the 1984 Critical Area Act, to protect the natural resources of Chesapeake Bay and tidal shorelines.

Alternative 1 Site

The Alternative 1 site consists of open space and is adjacent to recreational land uses such as the Mill Creek Marina, the Cottages at Greenbury Point, and walking trails. In the NSA Annapolis IDP, the Alternative 1 site is within the Greenbury Point planning district with a land use designation of Community Support. The Community Support designation has components that are similar to recreation.

The Greenbury Point ADP includes a Real Property Vision which states: “The Greenbury Point ADP District will support the NSA Annapolis mission by enhancing Morale, Welfare, and Recreation uses while protecting environmental conservation and mitigation measures and accommodating compatible mission activities.” The Greenbury Point ADP establishes the primary use of the area for MWR program opportunities and outdoor training space for USNA Midshipmen (NAVFAC Washington, 2018a).

Portions of Greenbury Point are open to the public, including Possum Point and Mill Creek Marina, the nature center, and the trail network. The waterways adjacent to NSA Annapolis are publicly accessible, with multiple boat landings and marinas nearby, and are used for a variety of recreational and commercial purposes. In accordance with 33 CFR part 334, access to the waterways around Greenbury Point could be restricted in response to military activities that pose safety hazards to non-participating personnel through the activation of the Carr Creek and Whitehall Bay Danger Zones.

Alternative 2 Site

The Alternative 2 site is used for recreational purposes. It is adjacent to the existing RV Park, which is considered a recreational land use, and the Annapolis Partners property to the south. In the NSA Annapolis IDP, the Alternative 2 site is within the NSAA Support planning district with a land use designation of Natural Open Space (NAVFAC Washington, 2018a).

The NSAA Support District ADP includes a Real Property Vision which states: "The NSA Annapolis Support District ADP will provide an appropriate level of security and compatible land uses, with modern facilities and infrastructure that supports the U.S. Naval Academy and the military community." The primary use established for this district is to provide critical support functions to USNA and NSA Annapolis, including family and unaccompanied housing areas, community support, administrative/headquarters functions, and waterfront operations (NAVFAC Washington, 2018a).

3.7.2 Environmental Consequences

To evaluate each alternative's potential to affect land use, several factors were identified for assessment and determination. These factors include compatibility with onsite and adjacent land uses, public access to adjacent land and waterways, changes in existing land uses that might be valued by local communities, AT/FP requirements, and the duration/permanency of the Proposed Action.

3.7.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline land uses or land use compatibility. Therefore, no significant effects on land use would occur.

3.7.2.2 Alternative 1 Potential Effects

Short-term, minor effects on land use would likely occur during construction activities under Alternative 1. These effects would include those related to noise and local air quality, which are discussed in their respective sections.

Within the NSA Annapolis IDP, the Alternative 1 site is classified as community support; the proposed RV Park would be consistent with this land use classification and would be compatible with the land use in this area of NSA Annapolis. The adjacent land uses include Mill Creek Marina, walking trails, and the Cottages at Greenbury Point, which are considered recreational and community support. Therefore, the proposed use of the RV Park, which is community support, would not only be compatible with the environment but would serve a similar function to the surrounding area. It would also align with the installation's vision of the Greenbury Point district to, "support the NSA Annapolis mission by enhancing Morale, Welfare, and Recreation uses while protecting environmental conservation and mitigation measures and accommodating compatible mission activities."

Overall, Alternative 1 would be compatible with existing land uses within the IDP and would not adversely affect existing or planned uses within the district. Land use conflicts would not be created within the publicly accessible and navigable waters of Mill Creek, Carr Creek, or Whitehall Bay. As described in Section 2.3.2 , public access and use of Possum Point and other recreational spaces would not be impeded. Also, Alternative 1 would not affect Midshipmen training that occurs on Greenbury Point. Alternative 1 would not create any major incompatibilities with Plan 2040's Peninsula Policy Area and would not adversely affect shoreline preservation or floodplain conservation.

Summary

Under Alternative 1, construction would cause short-term, minor effects on land use. The proposed use would be compatible with the adjacent land uses and existing development plans. Alternative 1 would not have significant effects on land use.

3.7.2.3 Alternative 2 Potential Effects

Similar to Alternative 1, short-term, minor effects on land use would likely occur during construction activities.

The RV Park would be considered a community support land use. The NSA Annapolis IDP classifies the Alternative 2 site as natural open space; therefore, this alternative would change the land use designation of the Alternative 2 site from natural open space to community support. However, this land use change would be compatible with the district's vision of providing, "an appropriate level of security and compatible land uses, with modern facilities and infrastructure that supports the U.S. Naval Academy and the military community." The community support designation has components that are similar to and compatible with recreation. The Alternative 2 site is adjacent to the existing RV Park and the proposed RV Park would be compatible with this surrounding land use.

Within the IDP, the Alternative 2 site is classified as *Developable*/*Mitigation Required*, due to the existing buildings and AT/FP standoffs and setbacks, trees, and sloping terrain. Alternative 2 would reduce the total lands within this classification by approximately 1 percent, representing a negligible change in overall developable space.

Under Option A, the Retelle Building would remain on site and its current recreational use would continue. The construction of a new Comfort Station would be consistent with the rest of the RV Park land use. Land use effects under Option B would be similar to Option A. Under Option B, the Retelle Building would be renovated and used as a Comfort Station. The Retelle Building would still be used for recreational purposes.

Overall, Alternative 2 would result in a land use change, but would remain compatible with existing land uses identified within the IDP. It would not adversely affect existing or planned land uses within this portion of the installation. Alternative 2 would not create any land use conflicts within the publicly accessible and navigable waters of the Severn River. Alternative 2 would not create any major incompatibilities with Plan 2040's Peninsula Policy Area and would not adversely affect shoreline preservation or floodplain conservation.

Summary

Under Alternative 2, construction would cause short-term, minor effects on land use compatibility. The proposed use would be compatible with the adjacent land uses and existing development plans. Alternative 2 would not have significant effects on land use.

3.8 Noise

This discussion of noise includes the types or sources of noise and the associated sensitive receptors in the human environment.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound is all around us. The perception and evaluation of sound involves three basic physical characteristics:

- Intensity: the acoustic energy, which is expressed in terms of sound pressure, in decibels
- Frequency: the number of cycles per second the air vibrates, in hertz
- Duration: the length of time the sound can be detected

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels (e.g., through occupational exposure) can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events is diverse and is influenced by the type of noise; perceived importance of the noise; its appropriateness in the setting, time of day, and type of activity during which the noise occurs; and sensitivity of the individual.

Basics of Sound and A-Weighted Sound Level

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. This vast range means that using a linear scale to represent sound intensity is not feasible. The decibel is a logarithmic unit used to represent the intensity of a sound, also referred to as the sound level. All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second or hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" scale that filters out very low and very high frequencies to replicate human sensitivity. It is common to add the "A" to the measurement unit to identify that the measurement has been made with this filtering process (i.e., dBA). In this document, the decibel unit refers to A-weighted sound levels for human receptors. Table 3-14 provides a comparison of how the human ear perceives changes in loudness on the logarithmic scale.

Figure 3-11 provides a chart of A-weighted decibels (dBA) from typical noise sources. Some noise sources (e.g., air conditioner, vacuum cleaner) are sounds that maintain a constant sound level for some period (Cowan, 1994). Other sources (e.g., automobile, heavy truck) are the maximum sound produced during an event like a vehicle pass-by. A variety of noise metrics have been developed to describe noise over different time periods, as discussed in the following text.

Table 3-14 Subjective Responses to Changes in A-Weighted Decibels

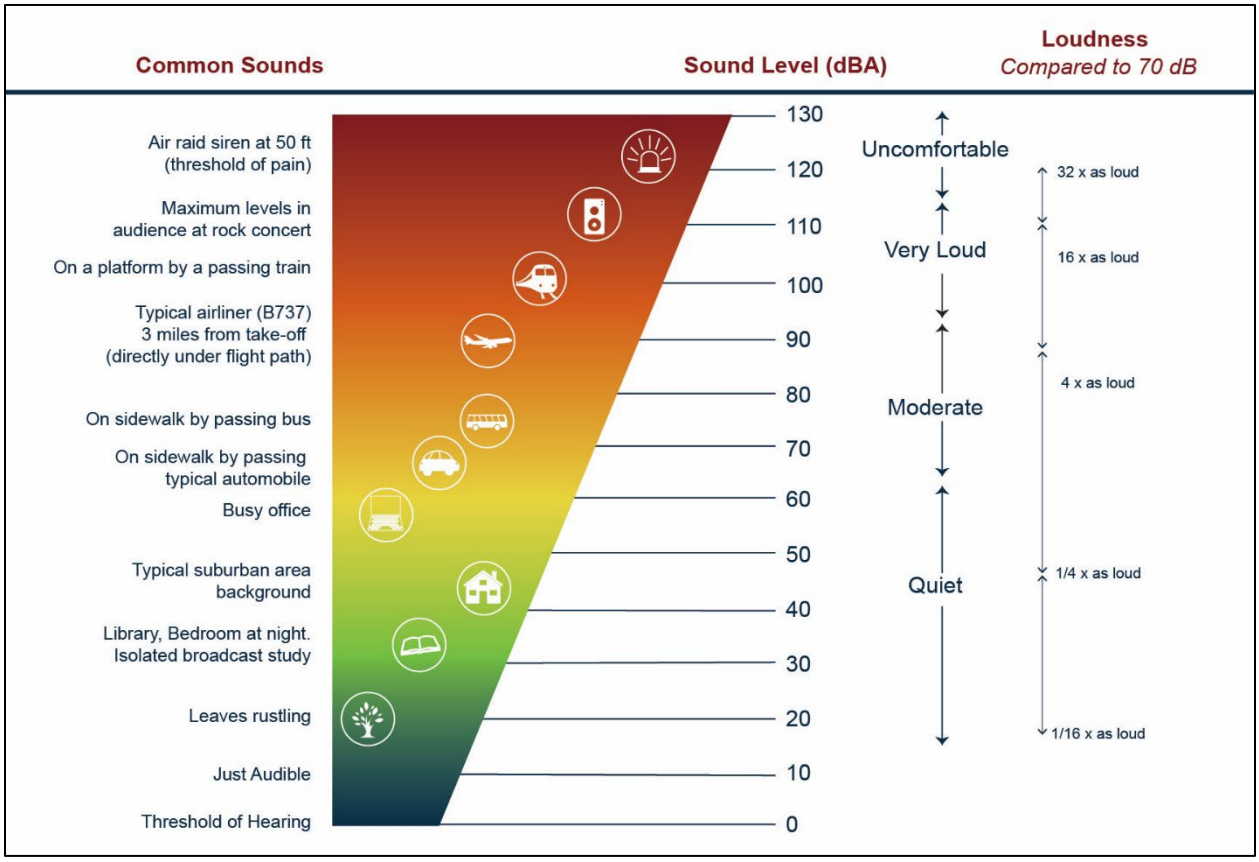
Change	*Change in Perceived Loudness*
3 decibels	Barely perceptible
5 decibels	Quite noticeable
10 decibels	Dramatic—twice or half as loud
20 decibels	Striking—fourfold change

Noise Metrics

A metric is a system for measuring or quantifying a characteristic of a subject. Because noise is a complex physical phenomenon, different noise metrics help to quantify the noise environment.

The maximum A-weighted sound level, or Lmax, is the highest A-weighted sound level measured during a single event where the sound level changes value with time (e.g., an aircraft overflight). During an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the observer, and returns to the background level as the aircraft recedes into the distance. Lmax defines the maximum sound level occurring for a fraction of a second. For aircraft noise, the "fraction of a second" over which the maximum level is defined is generally one-eighth of a second (ANSI, 1988).

Figure 3-11. A-Weighted Sound Levels From Typical Sources



Source: Adapted from (Cowan, 1994)

3.8.1 Affected Environment

Response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and whoever hears it (the receptor), receptor sensitivity, and time of day. A noise-sensitive receptor is defined as a land use where people involved in indoor or outdoor activities could be subject to stress or considerable interference from noise. Such locations or facilities often include residential dwellings, hospitals, nursing homes, educational facilities, and libraries. Sensitive receptors can also include noise-sensitive cultural practices, some domestic animals, or certain wildlife species.

The existing ambient environment at the Alternative 1 and 2 sites can be characterized as suburban and are within range of occasionally noticeable and distinct sounds. The main sources of noise on North Severn Complex include vehicle traffic, boat operations, drone operations, range operations, and typical urban/suburban uses. The alternative sites are near the Mill Creek Marina, Timberdoodle and Pipsissewa Trails, the Cottages at Greenbury Point, the Annapolis Partners Property, and the Annapolis MWR Campground. Located farther from the Alternative 1 and 2 sites are the Naval Academy Primary & Secondary (NAPS) school, the Billy the Kid Youth Center, NSA Annapolis Child Development Centers, and the Naval Health Clinic.

The alternative sites are located on NSA Annapolis property within Anne Arundel County. The county land nearest to the alternative sites is zoned residential (the nearest off-base residential areas are 1,400 feet to 2,800 feet from Alternative 1 and approximately 2,000 feet from Alternative 2). Annapolis Code

of Ordinances states that in residential zoning districts, the maximum noise level is 65 dBA between 7 a.m. and 10 p.m. and 55 dBA between 10 p.m. and 7 a.m. (11.12.020 - Noise prohibition., 2024). Table 3-15 shows typical sound levels for various types of residential land uses. Urban/noisy suburban areas have sound levels at 55 dBA during the daytime and 49 dBA during nighttime hours. Normal suburban areas are 50 dBA during the day and 44 dBA at night.

Table 3-15 Typical Residential Sound Levels

Residential Land Use	*Daytime Sound Level*	*Nighttime Sound Level*
Very Noisy Urban	66 dBA	58 dBA
Noisy Urban	61 dBA	54 dBA
Urban/Noisy Suburban	55 dBA	49 dBA
Quiet Urban/Normal Suburban	50 dBA	44 dBA
Quiet Suburban	45 dBA	39 dBA
Very Quiet Suburban/Rural	40 dBA	34 dBA

Source: (ANSI/ASA, 2013)
Key: dBA = A-weighted decibels

3.8.2 Environmental Consequences

Analysis of potential noise effects includes estimating noise levels from the Proposed Action and determining potential effects on sensitive receptor sites.

3.8.2.1 No Action Alternative

The Proposed Action would not occur under the No Action Alternative, and noise levels would remain the same as existing conditions. The noise environment would continue to be affected by noise sources such as traffic; boat, drone, and range operations; and typical suburban/urban land uses. Therefore, no significant effects on the noise environment would occur.

3.8.2.2 Alternative 1 Potential Effects

The study area for noise effects includes the Alternative 1 site and surrounding areas. The Alternative 1 site is on the edge of Browns Cove at Mill Creek Marina and surrounded by trees. While Beach Circle runs through the project site, Hooper High Road and a building by the dock at Mill Creek Marina are adjacent to the site. Approximately 15 feet lie between the border of Alternative 1 and the building by the dock. The northern edge of the site is approximately 100 to 200 feet from the shoreline and the boat dock at the marina. The Timberdoodle and Pipsissewa Trails are approximately 35 feet and 170 feet south of the Alternative 1 site, respectively; the Cottages at Greenbury Point are approximately 350 feet to the south; and the NAPS school is approximately 2,000 feet northwest of the site. The nearest off-base residents are located approximately 1,400 feet north of the site, across Mill Creek.

As shown in Table 3-16, the Lmax from construction equipment and trucks can range from 74 dBA to 90 dBA at 50 feet. Given these noise levels, construction noise at 15 feet would range from 84 dBA to 100 dBA while construction noise at 75 feet would range from 71 dBA to 87 dBA (see Appendix D, Noise Calculations). Populations 15 feet away would be near the building by the marina or the parking lot and would likely move to the shoreline.

The loudest construction noise at 1,400 feet would be about 61 dBA. Populations at the Mill Creek Marina, traveling on Beach Circle and Hooper High Road, at the Timberdoodle and Pipsissewa Trails, at the Cottages at Greenbury Point, and at the NAPS school could experience effects from increased noise

levels; however, these effects would be intermittent, short-term, and confined to daytime hours. Additionally, noise levels would dissipate as construction activities moved away from these sites. The trees surrounding the Alternative 1 site would also provide a buffer from the noise. The site already experiences noise from boat operations at the Mill Creek Marina and from traffic on Beach Circle and Hooper High Road. Therefore, short-term noise effects would be minor.

Table 3-16 Construction Equipment Noise Emission Levels

Equipment	*Typical Noise Level (dBA) 50 feet from Source*
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Crane	88
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jack hammer	88
Loader	85
Paver	89
Pump	76
Rail saw	90
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike driver	77
Tie cutter	84
Tie inserter	85
Truck	88

Source: (Federal Transit Administration, 2006).
Key: dBA = A-weighted decibels.
Note: Table based on a USEPA Report, which measured data from railroad construction equipment taken during the Northeast Corridor Improvement Project, and other measured data.

In the long term, noise effects from the RV Park's operations would result from increased traffic to and from the site and from patrons staying at the RV Park. The noise levels generated from operations would be within the normal ambient environment for suburban uses, which would be a slight increase from the existing ambient environment. Therefore, long-term noise effects would be minor.

Summary

Alternative 1 would result in short-term, minor noise effects from construction. However, these effects would be intermittent, confined to daytime hours, and minimized by the surrounding trees. Because noise levels would remain within the typical suburban levels, long-term noise effects from RV Park operations would be minor. Alternative 1 would not cause significant noise effects.

3.8.2.3 Alternative 2 Potential Effects

Option A

The Alternative 2 site and the surrounding area constitute the study area for the analysis of noise effects. Alternative 2 would be north of the Annapolis Partners Property, with the Retelle Building approximately 20 feet from the nearest building on the Annapolis Partners Property. The Annapolis MWR Campground would be approximately 125 feet northwest of the project site. The site would extend along Kenwood Road and would be adjacent to Beach Road while the northeastern corner of the site would be approximately 45 feet from Kinkaid Road. The NSA Annapolis Child Development Centers would be approximately 1,055 feet east of the site, the Billy the Kid Youth Center would be approximately 1,300 feet east of the site, the Naval Health Clinic would be about 1,325 feet to the northeast, and the NAPS school would be approximately 4,000 feet northeast of the site. The nearest off-base residents are located approximately 2,000 feet northwest of the site; noise from construction would be about 58 dBA. Trees would surround the site to the west, north, and east. Construction noise at 20 feet would range from 82 dBA to 98 dBA (see Appendix D, Noise Calculations). Populations at the Annapolis Partners Property; Annapolis MWR Campground; the Annapolis Child Development Center, the Billy the Kid Youth Center; Naval Health Clinic; and those traveling on Kenwood Road, Beach Road, and Kinkaid Road could experience effects from increased noise levels; however, these effects would be intermittent, short-term, and confined to daytime hours. Additionally, noise levels would dissipate as construction activities moved away from the Retelle Building. The trees surrounding the Alternative 2 site would also provide a buffer from the noise. Populations at this site are already exposed to noise from activities that occur at the Annapolis Partners Property; Annapolis MWR Campground operations; and traffic on Kenwood Road, Beach Road, and Kinkaid Road. Therefore, short-term effects from noise would be minor.

In the long term, noise effects from the RV Park's operations under Alternative 2 would be similar to Alternative 1, but slightly greater. Noise effects would occur from increased traffic to and from the site and from the patrons using the RV Park. Because more RV patrons could use the site under Alternative 2, this alternative could cause slightly more noise effects than Alternative 1. However, the noise levels generated from operations would be within the normal ambient sound environment for suburban uses, similar to existing conditions. Therefore, long-term effects from noise would be minor.

Option B

Noise effects under Option B would be similar to those described under Option A. However, it is expected that the renovation of the existing Retelle Building would take more time than the construction of a new building (Option A). Therefore, short-term effects from noise would be slightly greater than those estimated under Option A but would be minor.

Summary

Alternative 2 would result in short-term, minor noise effects from construction. However, these effects would be intermittent, confined to daytime hours, and minimized by the surrounding trees; and would diminish as activities moved away from the site. Because more RV patrons could use the Alternative 2 site, this alternative could cause slightly more long-term noise effects than Alternative 1. Alternative 2 would not cause significant noise effects.

3.9 Infrastructure

This section includes potable water, wastewater, stormwater capacity, electricity, solid waste management, and communications infrastructure.

3.9.1 Affected Environment

Potable Water

Potable water for both alternative sites at the North Severn Complex is supplied by Anne Arundel County at an average rate of 188,000 to 200,000 gallons per day. Potable water is supplied through Navy-owned infrastructure within the installation. This infrastructure includes an elevated water storage tank adjacent to Kinkaid Road, which provides adequate water pressure for fire protection demands (NAVFAC Washington, 2018a). Both action alternatives would be supplied with potable water from this system once the existing water line infrastructure is upgraded.

Wastewater

Wastewater treatment at the North Severn Complex is handled by the Navy-owned wastewater treatment plant (WWTP) adjacent to Carr Creek. This WWTP is currently rated to treat up to 300,000 gallons per day, which is sufficient to meet current and future demands. Upgrades were completed in 2021 to comply with MDE denitrification standards. Alternatives 1 and 2 would use this wastewater infrastructure.

Stormwater Capacity

Stormwater infrastructure at NSA Annapolis is Navy-owned and maintained. Stormwater infrastructure consists primarily of traditional storm drainpipes, culverts, curb inlets, outfalls and oil/water separators. There are no storm sewers on the installation. Most of the infrastructure was installed prior to 1950. The aging infrastructure, combined with the installation's low elevations, create challenges for efficient stormwater management at NSA Annapolis (NAVFAC Washington, 2018a). Some low-impact development stormwater features have been incorporated at NSA Annapolis including rain gardens, bioretention basins, and permeable pavements. These features would continue to be used on the installation, where feasible. The 2013 NSA Annapolis Regional Stormwater Improvement Plan highlights the need for a detailed condition assessment for stormwater infrastructure to identify and prioritize upgrades.

Stormwater at the Alternative 1 site is currently handled through a series of inlets and drainage lines that discharge into Whitehall Bay. At the Alternative 2 site, there is no known existing stormwater infrastructure.

Electricity

Electricity at NSA Annapolis is purchased from Baltimore Gas and Electric (BGE) (NAVFAC Washington, 2018a). The majority of BGE's electricity is generated from natural gas (40 percent), nuclear (33 percent), and coal (20 percent). Seven percent of BGE's electricity is from renewable sources including wind, solar, and hydroelectric (BGE, 2024). The BGE electricity is distributed through two installation-owned independent distribution systems. The proposed RV Park would use the North Severn Complex electrical distribution system that is served through a local substation. The North Severn Complex electrical distribution system features redundant feeders and automatic transfer capabilities in the event of a service disruption. In addition, the distribution system consists of both overhead and underground primary lines. Some high-priority installation facilities also have onsite backup generation capabilities through oil-fired and natural gas generators (NAVFAC Washington, 2018a). Overall, the electrical distribution system at NSA Annapolis is adequate to meet existing and future demand. However, there are condition issues with the current substation, which will likely need replacement within the next 20 years (NAVFAC Washington, 2018a).

Solid Waste Management

NSA Annapolis has a solid waste disposal and recycling contract with several private service providers. Solid waste management infrastructure at the installation includes waste dumpsters and various recycling receptors for cardboard, paper, books, plastics, glass, aluminum cans, and scrap metal. NSA Annapolis's recycling program includes an onsite mulching operation for landscaping waste. Solid waste generated through construction and demolition projects is required to be recycled to the greatest extent possible (Anne Arundel County, 2013).

Communications

Communication networks at NSA Annapolis include both Navy-operated information technology networks and commercial information technology infrastructure. The majority of the North Severn Complex is served through commercial infrastructure. Commercial availability of fiber cable networks at the North Severn Complex is currently inadequate due to aging infrastructure. Additionally, some existing buildings use copper cables, which slow the network's speed (NAVFAC Washington, 2018a).

3.9.2 Environmental Consequences

Appendix E contains a detailed breakdown of assumptions and calculations used for determining potential effects to infrastructure as a result of Alternatives 1 and 2.

3.9.2.1 No Action Alternative

Under the No Action Alternative, the RV Park would not be constructed. There would be no additional demand on infrastructure capacity. Current conditions at the existing RV Park would continue. Therefore, no significant effects on infrastructure would occur.

3.9.2.2 Alternative 1 Potential Effects

Assuming the RV Park is operating at capacity to evaluate a highest-use scenario, the use of infrastructure would primarily be affected by the number of overall reservations, regardless of length of stay (for example, an RV patron is likely to empty its gray water tank once per reservation, but the usage of water per person would remain the same regardless of annual reservations per site). Historical

utilization rates of the existing RV Park suggest an average of 46 yearly reservations per RV site (NSA Annapolis, 2014). The addition of approximately 35 RV sites under Alternative 1 would therefore result in an estimated 1,610 yearly reservations. It was also assumed each reservation would include an average of three people.

Potable Water

Under Alternative 1, water utility lines would be installed underground to connect the site to the main water line. During construction, there could be short-term, minor effects on potable water infrastructure. These effects would be closely monitored and coordinated with potentially affected communities to ensure there would be no serious disruptions to critical mission activities.

Once operational, RV patrons would have access to potable water within the Comfort Station and for filling their potable water holding tanks. For this analysis, it was assumed that RVs have an average potable water tank capacity of 60 gallons and that each RV Park patron would fill their RV water tank once during their stay. Average potable water consumption per person was assumed to be 60 gallons per day within the Comfort Station (EcoRise, 2022). Using these assumptions, the maximum (or worst-case) increase in potable water demand would be approximately 265 gallons per day to fill RV potable water tanks and 6,300 gallons per day used at the Comfort Station (see Appendix E for the full calculations). This would equate to approximately 3 percent of the existing daily supply at the North Severn Complex. Therefore, long-term effects on potable water capacity would be minor.

Wastewater

During construction, wastewater generation would be limited to the construction crews. A negligible amount of wastewater used during construction would be appropriately and routinely disposed of off-site by a contractor. There would be no service disruptions to wastewater infrastructure. Therefore, short-term effects on wastewater infrastructure would be negligible.

Under Alternative 1, a connection from the site to the North Severn Complex wastewater sewer system would be installed. Wastewater would flow through this system to the Navy-owned WWTP adjacent to Carr Creek. For this analysis, it was assumed that RVs have average gray and black water holding tank capacities of 50 and 35 gallons, respectively. It was also assumed that RV Park patrons would empty their gray and black water holding tanks once during their stay and wastewater generated from comfort station usage would be roughly equal to potable water used. Based on these assumptions, the maximum (or worst-case) increase in wastewater demand would be approximately 375 gallons per day from gray and black water tanks and 6,300 gallons per day from use of the Comfort Station (see Appendix E for the full calculations). This would equate to approximately 2 percent of the 300,000 gallon per day capacity at the WWTP, which is sufficient to meet current and future demands. Therefore, Alternative 1 would result in a long-term, minor increase in wastewater infrastructure demand.

Stormwater Capacity

Stormwater at the Alternative 1 site is currently managed through a series of inlets and drainage lines that discharge into Whitehall Bay. During construction, Alternative 1 would likely result in localized, short-term effects on the existing stormwater management capacity. The installation of temporary stormwater management controls (and BMPs) at construction initiation would minimize adverse effects. An MDE-approved ESC plan and NPDES General Construction Permit would be required for this project, which would include a stormwater management plan and would address ESC during construction. These plans would protect against soil erosion and sedimentation into receiving water bodies. Adverse effects

would also be temporary until permanent stormwater management controls are installed. Therefore, the short-term effects on stormwater capacity would be minor.

The existing stormwater system would be upgraded under Alternative 1. This upgrade would account for the additional proposed impervious surface. Alternative 1 stormwater management controls would be designed to ensure that post-development hydrology meets or improves pre-development hydrology, pursuant to Section 438 of the Energy Independence and Security Act. Low-impact development would also be incorporated into the site design, as required by the DoD UFC (NSA Annapolis, 2021). Thus, there would be no long-term effects on stormwater capacity. For more details on the effects of stormwater on surface water and wetlands, see Section 3.2.2.

Electrical

Under Alternative 1, a connection would be installed from the site to the North Severn Complex electrical distribution system. During electrical line connections and tie-ins, Alternative 1 could have short-term, minor effects on electrical infrastructure capacities. These effects would be closely monitored and coordinated to ensure no serious disruptions.

To estimate the effects on electrical infrastructure, it was assumed that approximately 35 RV sites would be used every day year-round. This would represent a worst-case scenario, or maximum expected demand, on the electrical infrastructure. It was also assumed that each RV would use an average of 20 kilowatt hours (kWh) of electricity per day (Cohen & Thain, 2024) for a total of 255,500 kWh per year. In addition to the estimated electrical demand for the individual RV sites, the proposed RV Park would include a Comfort Station with amenities such as showers, laundry, and vending machines. Assuming the Comfort Station would include modern, high-efficiency lighting, HVAC, and appliances, the estimated additional electrical demand for this facility would be approximately 45,900 kWh per year (U.S. Energy Information Administration, 2016). Thus, the total additional electrical demand would be approximately 301,400 kWh per year under Alternative 1.

This additional demand would represent a small fraction of the installation's overall electrical capacity. The existing electrical distribution system, with its redundant feeders and automatic transfer capabilities, is adequate to meet the increased electrical demand from Alternative 1. Therefore, long-term effects on electrical infrastructure would be minor.

Solid Waste Management

During construction, the contractor would handle solid waste management. There are no existing aboveground structures on the Alternative 1 site that require demolition. Thus, solid waste management during construction would be limited to primarily waste created by the construction crews. Waste generated during construction activities would be disposed in accordance with applicable local, State, and/or Federal regulations. Therefore, short-term effects on solid waste management would be negligible.

Under Alternative 1, an enclosed dumpster and recycling pad would be installed at the site. Trash and recycling would be routinely serviced by a contractor. To estimate a maximum, or worst-case, scenario of solid waste generated in the long term by RV patrons, it was assumed that approximately 35 RV sites would be used every day year-round. It was also assumed that each RV patron would generate an average of 1.5 pounds of non-recyclable solid waste per day. This assumption was based on the average person in the United States generating approximately 5 pounds of municipal solid waste per day (USEPA, 2023d) and accounting for a strict recycling policy at the RV Park. Assuming an average of three people

per RV, for a total of 105 people using the Park on any given day, the total non-recyclable solid waste generation would be approximately 29 tons per year under Alternative 1. This additional solid waste represents a manageable increase within the capacity of the existing solid waste disposal and recycling program. Thus, long-term effects on solid waste management would be minor.

Communications

Under Alternative 1, trenching would occur to install an underground communication/internet line. During construction, Alternative 1 could have short-term, minor disruptions on communication infrastructure. These effects would be closely monitored and coordinated to ensure no serious disruptions.

The proposed communication line would connect to the existing commercial communication infrastructure and would increase overall demand within the system. Long-term effects on communication infrastructure would be negligible. There would be no effects on mission-critical, Navy-owned communication infrastructure.

Summary

Construction would cause short-term, negligible to minor effects on infrastructure. These temporary effects would be local and would not be expected to affect mission-essential activities or communities adjacent to the installation. During the proposed RV Park operation, there would be no long-term effects on stormwater capacity. However, there would be long-term, minor effects on potable water, wastewater, electrical, and solid waste management; and negligible effects on communications infrastructure. Alternative 1 would not have significant effects on infrastructure.

3.9.2.3 Alternative 2 Potential Effects

Under Alternative 2, Option A and Option B would have similar effects on infrastructure; thus, the following analysis represents both options. Electrical infrastructure and solid waste have a slight difference between Options A and B, which is discussed below.

Potable Water

Under Alternative 2, short-term effects on potable water would be the same as Alternative 1. Under Alternative 2, water utility lines would be installed underground to connect the site to the main water line. Once operational, RV patrons would have access to potable water. To estimate the long-term effects, it was assumed that 50 RV sites would be used year-round. Based on historical data, this would result in 2,300 yearly RV patrons. Using the same method as Alternative 1, the worst-case scenario for potable water demand was calculated. It was assumed that each RV patron would fill their average 60-gallon water tank once during their stay. Average potable water consumption per person was assumed to be 60 gallons per day within the Comfort Station (EcoRise, 2022). Thus, the total additional potable water demand would be 378 gallons per day from filling RV holding tanks and 9,000 gallons per day used at the Comfort Station (see Appendix E for the full calculations). This additional demand would represent approximately 4.5 percent of North Severn Complex's current potable water supply. Although the long-term effects on potable water capacity would be slightly more under Alternative 2, compared to Alternative 1, these effects would still be minor.

Wastewater

Under Alternative 2, short-term effects on wastewater would be the same as Alternative 1. The Alternative 2 site would connect to the North Severn Complex wastewater sewer system, like Alternative 1. Treatment would be provided by the Navy-owned WWTP adjacent to Carr Creek. Using the same method as Alternative 1, the worst-case scenario for wastewater demand was calculated. It was assumed that each RV patron would empty their gray and black water tanks once during their stay and that RVs have average gray and black water holding tank capacities of 50 and 35 gallons, respectively. Thus, the total additional wastewater demand would be approximately 536 gallons per day from RV wastewater holding tanks and 9,000 gallons per day from use of the Comfort Station (see Appendix E for the full calculations). This would equate to approximately 3 percent of the future 300,000 gallons per day capacity proposed for the wastewater treatment facility. Although the long-term effects on wastewater infrastructure would be slightly greater under Alternative 2, compared to Alternative 1, these effects would still be negligible.

Stormwater

There is no known existing stormwater management infrastructure at the Alternative 2 site. Thus, during construction there would be no effects on stormwater capacity. An MDE-approved ESC plan and NPDES General Construction Permit would be required for this project, which would include a stormwater management plan and would address ESC during construction. These plans would protect against soil erosion and sedimentation in stormwater runoff.

A stormwater management system would be installed under Alternative 2. This system would account for the proposed impervious surface. Alternative 2 stormwater management controls would be designed in the same manner as Alternative 1; however, controls would be designed to account for more impervious surface than under Alternative 1. Alternative 2 would not result in long-term effects on stormwater capacity.

Electrical

Under Alternative 2, short-term effects on electrical infrastructure would be the same as Alternative 1.

The Alternative 2 site would connect to the North Severn Complex electrical distribution system. The anticipated electrical demand was calculated using the same assumptions as Alternative 1, but for 50 RV sites to understand the worst-case scenario. Thus, the estimated electrical demand from the 50 RV sites would be approximately 365,000 kWh per year. The total additional demand would be approximately 402,595 kWh per year, which is slightly greater than Alternative 1. This additional demand would represent a small fraction of the installation's overall electrical capacity and would not strain the existing infrastructure. Although the long-term effects on electrical infrastructure would be slightly greater under Alternative 2, compared to Alternative 1, these effects would still be minor.

Under Alternative 2 (Option B), long-term effects would be similar to Option A, except that the existing Retelle Building would be renovated and used as the Comfort Station. The Retelle Building is currently used for recreational activities and would not require a new electrical connection. However, the proposed Comfort Station would likely increase the Retelle Building’s current electrical consumption. The net increase would not be expected to be greater than that of the new-build Comfort Station assessed for Alternative 2 (Option A). The long-term effects of Alternative 2 (Option B) on electrical infrastructure would be minor, although slightly greater, than those estimated for Alternative 1.

Solid Waste Management

Under Alternative 2, short-term effects on solid waste management would be similar to Alternative 1. Given that the construction time would be longer to account for the additional RV pads, the amount of solid waste would be slightly more.

For Alternative 2, solid waste management would be implemented in the same manner as Alternative 1. Anticipated solid waste generation was calculated using the same assumptions as for Alternative 1, but for 50 RV sites to consider the worst-case scenario. Solid waste generated under Alternative 2 would be approximately 41 tons per year. This is a manageable increase within the capacity of the existing solid waste program. Although the long-term effects on solid waste management would be slightly greater under Alternative 2, compared to Alternative 1, these effects would still be minor.

Under Option B, the Retelle Building (constructed in 1946) would be renovated for use as the Comfort Station. Due to the age of the structure, it has the potential to contain asbestos-containing materials or lead-based paint. The Navy would determine if these hazards were present prior to any renovation activities. If present, these hazardous materials would be handled only by licensed contractors, and solid waste would be disposed of in accordance with applicable federal and state regulations.

Communications

Under Alternative 2, short-term effects on communications would be the same as Alternative 1.

Under Alternative 2, trenching would occur to install an underground communication/internet line. Once operational, the proposed RV park would place additional demand on the existing commercial communications network. Assuming that 50 RV patrons would be using the site, there would be a slightly greater communications demand as compared to Alternative 1. This demand would still be manageable. Although the long-term effects on communication infrastructure would be slightly greater under Alternative 2, compared to Alternative 1, these effects would still be negligible. There would be no effects on mission-critical, Navy-owned communication infrastructure.

Summary

During construction of Alternative 2, effects on infrastructure would be similar to Alternative 1. However, under Alternative 2, there would be no short-term effects on existing stormwater capacity and slightly more solid waste. During the proposed RV Park operation, more RV patrons could stay at the Alternative 2 site than the Alternative 1 site. Although long-term effects on infrastructure would be slightly greater under Alternative 2, compared to Alternative 1, the effect intensity level would still be the same. Alternative 2 would not have significant effects on infrastructure.

3.10 Transportation

Transportation systems encompass various modes of moving people and goods, including roadways, pedestrian routes, waterways, and public transit networks. Typically, a transportation assessment examines air, land, and sea routes, encompassing everything from bus routes and railways to bikeways and trails. For this assessment, the focus is on the vehicular and pedestrian networks likely utilized by RV Park patrons and construction vehicles. This includes the primary travel routes to and from the proposed locations, specifically within the North Severn Complex, as well as adjacent portions of Anne Arundel County that provide access to the installation.

3.10.1 Affected Environment

There are numerous transportation and circulation network features at NSA Annapolis. These features include primary, secondary, and tertiary roads; parking infrastructure; pedestrian and vehicular access security gates; sidewalks; and trails.

The primary roads at the North Severn Complex provide access to areas including the golf course, Brigade Sports Complex, NAPS school, Annapolis Partners area, and Greenbury Point. Secondary roads, most of which branch from Kinkaid Road, provide waterfront access, support, and administrative facilities. Tertiary roads at the North Severn Complex are generally unimproved access roads with minimal traffic. Tertiary roads provide access to facilities that have few visitors, such as the transmission tower on Greenbury Point. The IDP notes that the road system at the North Severn Complex is in overall adequate condition (NAVFAC Washington, 2018a).

The main transportation corridor providing access to the North Severn Complex incudes MD-450 and Baltimore Annapolis Boulevard. MD-450 is one of two crossing routes over the North Severn River and serves the City of Annapolis and Anne Arundel County. Vehicles accessing North Severn Complex via MD-450 would turn onto MD-648 and continue onto Greenbury Point Road. The annual average daily traffic in 2023 was 9,472 vehicles on MD-648 and 8,360 on the portion of Greenbury Point Road that enters North Severn Complex (MDOT, 2024).

The Alternative 1 site is accessible by traveling on Greenbury Point Road (a primary road), then Bullard Boulevard (a secondary road), and finally to McLeans Lane and Hooper High Road (secondary roads). The Alternative 2 site is accessible by traveling on Kinkaid Road (a primary road) to Beach Road (a secondary road); these are the same roads used to access the existing RV Park.

As detailed in the IDP, there are public transportation easements and rights-of-way traversing the North Severn Complex. Security gate infrastructure is limited to a checkpoint at the intersection of Kinkaid, Bennion, and Church Roads. There is also a vehicle/pedestrian security gate at the entrance to the North Severn Complex on Kinkaid Road that is open regularly (NAVFAC Washington, 2018a).

Pedestrian sidewalks are located within the housing, MWR, and administrative areas. The sidewalks provide access to the Navy Exchange/Commissary and Naval Health Clinic. There is also a network of recreational nature trails extending from the Naval Academy Athletic Association rugby field to northern portions of Greenbury Point (NAVFAC Washington, 2018a). There are no dedicated bicycle lanes or facilities within the installation.

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

Under the No Action Alternative, the RV Park would not be constructed and there would be no change to transportation. Therefore, no significant effects on transportation would occur.

3.10.2.2 Alternative 1 Potential Effects

During construction, there would be a minor increase in vehicular traffic from construction crews, equipment, and material deliveries to the Alternative 1 site. This would cause a negligible increase in wear on the roadways. Vehicular traffic would be limited to the roadways that provide access to the site (Greenbury Point Road, Bullard Boulevard, McLeans Lane, and Hooper High Road). Construction delays or detours would be unlikely to occur and portions of the Alternative 1 site could be used as a laydown

area. As a result, it is not anticipated that roads on Greenbury Point or access to the Mill Creek Marina would be affected.

During the operation of the RV Park, there would be a minor increase in traffic from RV patrons to the Alternative 1 site. This would cause minimal wear on the access roadways. Generally speaking, RVs are not wider than standard automobiles and have a similar turning radius to trucks with trailers, making their roadway requirements comparable to passenger vehicles. Thus, existing roadway configurations would be adequate to accommodate RV traffic. Traffic patterns associated with RV Park use would align with late morning check-in and mid-afternoon check-out times, avoiding peak commute hours at the installation, which would minimize effects on transportation network capacities. Additionally, typical RV guests stay for several days, minimizing day-to-day traffic and reducing potential impacts on local roads.

Pedestrian safety is a key consideration, as recreational walkers frequently use the roads and grassy shoulders around Greenbury Point. There are no sidewalks on Greenbury Point Road, Bullard Boulevard, McLeans Lane, or Hooper High Road. However, Greenbury Point Road and Bullard Boulevard (the primary and secondary roads that would be used to access the RV Park) have wide grassy shoulders that provide adequate space for recreational walkers on the installation. Populations that walk along these roads are accustomed to walking on the grass shoulders. The posted speed limit on North Severn Complex is 30 miles per hour (mph) at the entrance. The speed limit is reduced to 15 mph before the NAPS school and increased to 25 mph after the NAPS school. This ensures safe interactions between vehicles and pedestrians, including areas without adequate sidewalks. There are crosswalks and speed bumps present near the golf course and the NAPS school, which increase pedestrian safety.

Off-installation, USNA has raised safety concerns about MD-450, particularly for pedestrians and cyclists. The Academy has formally encouraged safety enhancements, such as bike paths, due to known safety hazards along this route, which currently limits midshipmen from using it for running. While additional traffic from RV patrons would utilize this route to access the North Severn Complex, the increase would be minor and is not expected to exacerbate these existing pedestrian safety concerns.

Not all RV patrons are expected to arrive and depart on the same day; however, approximately 35 RV patrons daily would have a negligible increase in traffic on MD-648 and Greenbury Point Road as it enters North Severn Complex (0.4 percent increase on both roadways).

Summary

During construction, short-term effects on the local transportation network would be minor. No major construction-related delays or detours are anticipated, and Mill Creek Marina access would not be affected. Long-term effects on the transportation network would be minor. Alternative 1 would not have significant effects on transportation.

3.10.2.3 Alternative 2 Potential Effects

Under Alternative 2, Option A and Option B would have similar effects on transportation; thus, the following analysis represents both options.

Under Alternative 2, short-term effects on transportation networks would be the same as Alternative 1. Except that these effects would occur on Kinkaid and Beach Roads.

For Alternative 2, long-term transportation effects would be minimized in the same manner as for Alternative 1. During the operation of the RV Park, there would be an increase in traffic from RV patrons to the Alternative 2 site. Long-term effects on transportation and circulation networks under Alternative

2 would be greater than those expected under Alternative 1 due to the greater number of RV sites. However, these effects would still be minor, as similar mitigation measures would help minimize effects.

Summary

Under Alternative 2, short-term transportation effects would mirror those of Alternative 1, with minor traffic increases from construction vehicles. During operation, traffic from RV patrons to the Alternative 2 site would be higher than in Alternative 1—but still minor—due to the larger number of RV sites. The total amount of transportation infrastructure affected would be slightly greater with Alternative 1. Alternative 2 would not have significant effects on transportation.

3.11 Public Health and Safety

This discussion of public health and safety includes consideration for any activities, occurrences, or operations that could affect the safety, well-being, or health of members of the public. A safe environment is one in which there is no, or optimally reduced, potential for death, serious bodily injury or illness, or property damage. The primary goal is to identify and prevent potential accidents or effects on the public. Public health and safety within this EA pertain to community emergency services, construction activities, and environmental health and safety risks to the public, including children.

3.11.1 Affected Environment

Community emergency services are organizations that ensure public safety and health by addressing different emergencies. Police, fire, and rescue service, and emergency medical service are the primary emergency service functions. NSA Annapolis has its own police department and fire department, and a mutual aid agreement with Annapolis and Anne Arundel County for emergency services. Naval Health Clinic Annapolis, located on the North Severn Complex, provides urgent, emergency, and inpatient health services to military personnel and their families.

Research shows that physical, mental, and emotional human health can be enhanced through outdoor recreational opportunities, such as camping (Avitt, 2021). Enhanced outdoor recreation opportunities and greenspace can improve morale, reduce levels of stress, and enhance brain functions, among other health indicators (Wulf, 2023). This includes specific physical and mental health benefits for people with disabilities when the outdoor activities are accessible and inclusive. Benefits for the disabled can include a reduction in the development of chronic health conditions like obesity and diabetes that might stem from limited mobility. In addition, individuals with developmental disabilities could experience improved mood and social behaviors (Bulger, 2023). The MWR Program offers military personnel and their families ways to relax, connect socially, and have fun (NavyMWR Annapolis, 2024).

Children are frequently present on NSA Annapolis as dependents of employees, residents, and visitors to the housing areas; in learning, youth, and recreation centers; and at the existing RV Park. Precautions for children's safety can include pedestrian access points, sidewalks, crosswalks, fencing, signage, limitations on use of certain areas, and requirements for adult supervision.

Primary and secondary roads provide vehicular access to the North Severn Complex and both alternative sites. The existing RV Park at the North Severn Complex is within walking distance of the Commissary and Navy Exchange with pedestrian-friendly access points. The Retelle Building, which is currently used for recreational activities, and a softball field are located within the Alternative 2 site. Greenbury Point offers several recreational opportunities such as Mill Creek Pier and Marina, the Cottages at Greenbury Point, a nature center, a dog park, and walking trails. There are no bike trails in the vicinity of either

alternative site. Walking trails and access roads on Greenbury Point are open to the public at the discretion of the ICO except when firearms ranges are operational and during some training events, which is indicated by a flashing red light and closed security gates.

3.11.2 Environmental Consequences

This public health and safety analysis addresses issues related to the health and well-being of military personnel, civilians, and their children living on or in the vicinity of NSA Annapolis, the eligible patrons who would recreate at the proposed RV Park, and any possible effects on the overall environment. Proposed Action activities would be conducted in accordance with applicable federal, state, and local regulations. Any secondary effects on public health, such as air quality and noise, are discussed in more detail in Sections 3.1 and 3.8, respectively.

3.11.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The existing RV Park would continue to be used for recreational purposes. The lack of additional campsites would not allow for additional eligible patrons to use the campground and benefit from the positive health effects of outdoor recreation. Patrons requiring ABA-accessible sites and Comfort Station would continue to be excluded from the existing RV Park. These adverse effects would be long-term but minor. Therefore, no significant effects on public health and safety would occur.

3.11.2.2 Alternative 1 Potential Effects

Under Alternative 1, public health and safety during construction would be associated with the safety of construction personnel within or adjacent to construction zones. Contractors performing construction activities would be required to prepare and follow safety protocols appropriate for specific tasks. They would comply with applicable worker safety laws, to include the use of required personnel protective equipment. The construction site would be clearly marked to discourage members of the public from mistakenly entering the area. The construction site would be entirely on installation property.

To access the Alternative 1 site from off the installation, RVs would take Greenbury Point Road, Bullard Boulevard, McLeans Lane, and Hooper High Road. Generally, these roads have no sidewalks and consist of several turns where vehicular line-of-sight is limited. In addition, Greenbury Point Road passes through the Naval Academy Golf Club, where frequent crossings by golf carts and golfers occur, and the road is marked accordingly. These road conditions and existing uses could result in potential safety conflicts, as pedestrians, dog walkers, and cyclists frequently use these roads. However, there is a grassy shoulder along the roadways that is used by pedestrians, which would alleviate some of the potential risks. Overall, the public safety risk would be long-term but minor. As described in Section 3.10.2.2, the average RV is no wider than a standard automobile (8 feet wide) and has a similar turning radius to trucks with trailers (50 feet swing radius), making their roadway requirements comparable to passenger vehicles. Thus, existing roadway configurations would be adequate to accommodate RV traffic, thereby creating no additional public safety concerns. In addition, posted speed limits would minimize new effects (from the minor RV traffic increase) on pedestrian safety. Overall, the public safety risk would be long-term but minor.

The recreational opportunities that would be provided by the new RV Park would provide long-term physical, mental, and emotional health benefits to military members and veterans, inclusive of those who require ABA-accessible campsites and Comfort Station. The setting of Possum Point, which is

surrounded by trees and waterways, would provide a natural, quiet, and restorative setting for RV Park patrons. The long-term public accessibility of Possum Point and Greenbury Point for outdoor recreation would not change.

During the construction of the new RV Park and after it is opened, Greenbury Point and Possum Point would remain open to the public for hiking and other recreational opportunities. The new RV Park would not limit these opportunities, aside from the period of time while the site is under construction.

Summary

Alternative 1 would result in short- and long-term, minor effects on public health and safety. Alternative 1 would allow for more eligible patrons, including those requiring ABA-accessibility to enjoy camping. This would result in long-term, minor, beneficial effects on military and public health through enhanced outdoor recreation opportunities and greenspace. Alternative 1 would not have significant effects on public health and safety.

3.11.2.3 Alternative 2 Potential Effects

Under Alternative 2, Option A and Option B would have similar effects on public health and safety; thus, the following analysis represents both options.

Construction under Alternative 2 would include site grading due to steep slopes and uneven terrain. Overall, construction would require a longer time frame to complete, compared to Alternative 1, due to the larger site size and grading requirements. However, the construction site would be clearly marked to discourage unauthorized access by the public. Construction contractors would be required to prepare and follow safety protocols appropriate for specific construction tasks and would comply with applicable worker safety laws.

Under Alternative 2, patrons would use the same access roads as the existing RV Park (Kinkaid and Beach Roads), resulting in increased vehicular traffic in the area. This increase could result in minor pedestrian safety effects. However, the pedestrian mobility infrastructure in this portion of the North Severn Complex includes sidewalks, which reduces the risk of pedestrian/vehicle conflicts.

Both options under Alternative 2 would result in short-term, minor effects on public health and safety from construction. In the long term, the public would retain the existing level of access to the North Severn Complex near Beach Road and while there would be increased traffic, any effects to pedestrians would be minor. There would be long-term beneficial effects on the health and morale of military members and their families from enhanced outdoor recreational opportunities and greenspace.

Summary

Under Alternative 2, (Options A and B), effects on public health and safety would be similar to Alternative 1. Alternative 2 would not have significant effects on public health and safety.

4 Cumulative Effects

The approach taken in the analysis of cumulative effects follows the objectives of NEPA and Navy procedures. A cumulative effect is defined as the effect on the environment that results from the incremental effect of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time.

4.1 Scope of Cumulative Effects

The cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. In general, the study area includes those areas previously identified in Chapter 3 for the respective resource areas. The time frame for cumulative effects centers on the timing of the Proposed Action.

The analysis considers "reasonably foreseeable" future actions. For this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for Environmental Impact Statements and EAs, management plans, land use plans, and other planning-related studies.

4.2 Past, Present, and Reasonably Foreseeable Actions

Projects in this section could contribute directly or indirectly to effects on the resource areas considered in this EA. Projects are included even if they are not found on North Severn Complex (such as USNA projects) because they could contribute to cumulative effects on a wider area, for example water resources or air quality.

4.2.1 Past Actions

Table 4-1 contains a list of the past actions or projects included in this cumulative effects analysis.

Table 4-1 Past Actions

Project Name	*Project Description*
Halligan Hall Energy Repairs	This project consisted of replacing the existing steam service and heating and air conditioning system in Halligan Hall (Building 181) with a more energy-efficient ground-source heat pump, also known as a geothermal well system. Approximately 190 6-inch-diameter wells were installed at a depth of up to 400 feet below Lawrence Field for the proposed ground-source heat pump system. The project also included restoring and selectively replacing the existing windows to improve the building's thermal performance (NAVFAC Washington, 2018c).
Perry Center Rip Rap Repair	This project consisted of repairing riprap along College Creek.
Perry Center Seawall Repair	This project consisted of repairs to the seawall along College Creek.
Academic Facilities Repairs for Maury Hall, Mahan Hall, and Sampson Hall	Interior and exterior renovations and restoration were completed for these buildings (Buildings 105, 106, and 107), which included modernization of all systems and restoration of historic finishes, among other minor facility repairs.

Project Name	*Project Description*
Beach Hall Conference Center Addition	The U.S. Naval Institute, which is in Beach Hall (Building 291), constructed a conference center addition on the western side of the building. The addition included a 400-seat auditorium/conference room with an open-air area for tables and chairs on the roof (NAVFAC Washington, 2018a).
Demolish Lincoln Housing, Kinkaid Road	The two-story, vacant, single-family houses along Kinkaid Road were demolished and removed. This land will be returned to the Navy following the divestment of Lincoln Housing interest.
MWR Cottages	Cottages were built adjacent to the former unaccompanied housing and Bay Room on Greenbury Point.
Dog Park	This project involved installing a dog park on Greenbury Point on McLeans Lane (NAVFAC Washington, 2018a).
P278 Modernize Wastewater Treatment Plant/Repair Wastewater Treatment Plant Denitrification Filter	The WWTP at North Severn Complex was upgraded to meet state standards for denitrification.
Renovation of Building 15NS for the Mail Center	This project involved the renovation of Building 15NS on the North Severn Complex (near Bennion Road) to relocate the mail center.
Automated Vehicle Access Gate	This project constructed an automated vehicle access gate located on Bullard Boulevard.
Renovate the Bay Room	This project on Greenbury Point renovated and modernized the Bay Room to make it more useful as an indoor MWR recreation.
Construct USNA Alumni Association and Foundation Headquarters	The USNA Alumni Association and Naval Academy Foundation constructed a new 29,000-square-foot Alumni Service Center and Headquarters facility with a 90- to 120-vehicle parking lot on NSA Annapolis property located at the Perry Center in the southwestern portion of the Upper Yard. Construction of the facility and parking lot required excavation, grading, and tree/vegetation removal (NAVFAC Washington, 2018c). The building, named the Fluegel Alumni Center, opened in late 2023. Tree plantings were conducted at the new Service Center and Headquarters facility and Greenbury Point as required by the MDE.
Nuisance Wildlife Management	This project consisted of nuisance deer culling.
Oyster Restoration	An oyster survey was conducted on College Creek, Carr Creek, and Mill Creek.
Deer Tick Control	Deer tick control feeder stations were installed on North Severn.
Pine Woods Reforestation	This project involved invasive plant treatments and tree planting/reforestation on North Severn.
Invasive Species Management	This work included invasive plant species treatments on North Severn.
Wetland Delineation, Shoreline Restoration, and Monitoring	Carr Creek shoreline stabilization and restoration projects included surveying, design, permitting, and construction/repair of multiple reaches. Post construction monitoring will be completed.
Greenbury Point Nature Center Pollinator and Invasive Species	Greenbury Point Nature Center project included addition of pollinator habitat and invasive species treatment.

Project Name	*Project Description*
Center for Cyber Security Studies	This project consisted of the construction of an approximately 206,000-square-foot new multistory facility at the Lower Yard to house the Center for Cyber Security Studies and a supporting two-story parking garage structure. The facilities were designed and constructed for energy efficiency and sustainability including, at a minimum, a Leadership in Energy and Environmental Design Silver certification.
Chapel Roof Repairs	This project consisted of roof repairs to the historic USNA Chapel (Building 108), located on the Lower Yard of NSA Annapolis, to address water intrusion.

4.2.2 Present and Reasonably Foreseeable Actions

Table 4-2 contains a list of the present and reasonably foreseeable actions or projects included in this cumulative effect analysis.

Table 4-2 Present and Reasonably Foreseeable Actions

Project Name	*Project Description*
Bancroft Hall Recapitalization Program (BHRP).	The program will provide utility infrastructure upgrades, repair deterioration of the building exterior, increase installation and energy resilience, reduce life cycle costs and support the Brigade by providing modern amenities to improve the Midshipmen's quality of life.
Renovate Ward Hall	The project will upgrade the electrical, mechanical, plumbing and fire protection features in the building to address the growing server room/datacenter environment in the facility.
Renovate the Visitors' Access Center at Halsey Field House	This project increases secured space within the facility and relocates non-secure space outside the NSAA secure perimeter.
Michelson Hall Repairs	The project repairs various components within Michelson Hall to clear a backlog of sustainment requirements and improve the educational mission by upgrading specialized classrooms and laboratories for the Chemistry, Computer Science, Mathematics, Oceanography and Physics Departments.
Leahy Hall Renovations	This project will provide interior and exterior renovations to Leahy Hall. Scope includes mechanical, electrical, and plumbing upgrades, reconfiguration of interior partitions, and new interior finishes such as flooring, ceiling systems and LED lighting.
Repair, Reconfigure, and Modernize Nimitz Library	The foundation of the library (Building 589), the windows, and the HVAC system were repaired/replaced in recent years and overall modernization and reconfiguration of the building continues to occur over several phases. This has included the addition of 7,000 square feet of learning space and new furniture for the first floor. The electrical system is slated to be replaced in the near future.
Utility Bridge Replacement	This project consists of the construction of a new utility bridge, connection of new utility lines, and the demolition and removal of the existing bridge across College Creek between the Upper and Lower Yards.

Project Name	*Project Description*
Seawall Repair and Restoration	NSA Annapolis plans to repair and restore approximately 19,334 linear feet of seawall on the shorelines of the Lower Yard along the Severn River, College Creek, Spa Creek, and Santee Basin; portions of the Upper Yard along the Severn River and College Creek; and portions of the North Severn Complex area along the Severn River and Yard Patrol Basin (NAVFAC Washington, 2018a). The repairs and restoration would address existing structural deficiencies and potential effects from future extreme weather events, storm surge, and land subsidence. Construction on the Farragut seawall broke ground in November 2022 and construction for the Ramsey Road seawall repairs are ongoing. Additional repair and restoration projects will occur over the next 10 to 20 years as funding becomes available.
Autonomous Outdoor Drone Lab	Construction of an autonomous outdoor Unmanned Aerial Vehicle, or drone, lab to support USNA's educational program.
USNA Bridge Area Pedestrian/Bicyclist Improvements	Enhancement of bicycle facilities along Maryland 450/Maryland 435, from the USNA Bridge to Rowe Boulevard, are in design by the Maryland State Department of Transportation, State Highway Administration. This project will also incorporate pedestrian improvements. Construction is targeted for fiscal year 2027.
Construct Security Enclave, North Severn	This project would establish a secure enclave for the administrative and operational core of North Severn Complex by constructing new perimeter fencing and a Virtual Perimeter Monitoring System. The proposed fencing follows the east side of Kinkaid Road from the waterfront to Bennion, Gage, and Eucalyptus Roads and turning north to secure the firing range (NAVFAC Washington, 2018a).
Lacrosse Facility	Construction and operation of a new lacrosse facility to enhance the training and well-being of the USNA's lacrosse teams.
Renovate Building 89NS	This project involves renovation and HVAC repairs of the MWR Recreation Center in Building 89NS located on the North Severn Complex off Bennion Road (NAVFAC Washington, 2018a).
Building 46NS Renovation	This project includes reconfiguring Building 46NS to increase the number of available rooms; make it ABA compliant; and to upgrade existing mechanical systems.
Greenbury Point Lagoon Berm Restoration	The purpose of this project is to stabilize 750 linear feet of eroding shoreline adjacent to an earthen berm, which contains contaminated dredge spoils. This restoration effort includes construction of a living shoreline.
Nuisance Wildlife Management	This project includes culling of nuisance deer.
Invasive Species Management	This work will include invasive plant species treatments on North Severn.
Shoreline Stabilization and Restoration	Shoreline stabilization and restoration work on additional reaches at North Severn will include surveying, design, permitting, and construction to address mission resilience.
Natural Resource Surveys	Flora and fauna species surveys would be conducted on North Severn.
Expand Mill Creek Marina	This project on Greenbury Point would expand the existing Mill Creek Marina storage and maintenance facility and the existing small-craft boat ramp adjacent to the boat slips (NAVFAC Washington, 2018a). Planning for this project has not been initiated; thus, the timeline for this project is currently unknown.
Reforestation	Reforestation and tree plantings would continue on Greenbury Point.
Pollinator Habitat	This project would establish pollinator habitat and enhancement of existing habitat.
Wetland Delineations	Wetland delineations would occur on North Severn.

Project Name	*Project Description*
Greenbury Point Nature Center Improvements	Nature center improvements will include re-paving ABA-compliant trails, wood-chipping and mowing other walking trails and general trail maintenance, pollinator habitat recreation/enhancement along ABA-compliant trails and around Nature Center, greenhouse installation, and dog cleanup stations.
Anne Arundel County Stormwater Runoff Controls	This multiyear, countywide project involves the design and construction of regional storm drain systems and stormwater management infrastructure. Environmentally sensitive design techniques are being, and will continue to be, employed to enhance the water quality of the county's stormwater runoff (Anne Arundel County, 2024).
North Severn Yard Patrol Basin Restoration and Repair Project	This project to be completed in five phases over several years will replace the failing YP pier and wave screen; and, make necessary repairs to the existing seawall and boat ramps.
Facility 329NS Upgrades	This project involves renovation and upgrades to Facility #329NS (former Navy Exchange) and surrounding infrastructure and utilities to house NSA Annapolis Security Forces. The existing parking lot would be utilized by Security.
Repair Baffling at Small Arms Rifle Range, Facility 269NS	This project will upgrade a 50-yard, partially baffled rifle range to a 50-yard, fully baffled range to comply with criteria contained in the U.S. Department of Energy, Range Design criteria, and Department of the Army Pamphlet 385-63. The project includes drainage improvements to mitigate flooding issues and slab on grade to support the rubber bullet trap. The bullet trap captures and contains bullets, reducing or eliminating the potential for hazardous lead to become airborne or wash into adjacent land or waterways.
Navy Community College	Renovate interior of Building 257, located on Hospital Point, to house the United States Naval Community College.
Brigade Sports Complex: Restaurant, Kitchen and Outdoor Patio	This project would renovate unused space within the Brigade Sports Complex to include a finished restaurant. The space will include kitchen space, dining and concession areas, restrooms, and an outdoor patio.
USNA Perimeter Wall Replacement	Project to repair/replace the existing perimeter wall, and incidental related work, along the south boundary of the USNA. The project preserves the historic attributes of the structure while improving safety and security.
Demolition: Mini Mart and North Severn Chapel	The work includes the demolition of the existing buildings, utilities, parking lots, and concrete pad, returning the sites back to a green site. Both buildings are located on North Severn.
Chapel and Leahy Hall Steam Distribution Repairs	This project consists of repairs to the water and steam distribution lines that provide heating at the USNA Chapel (Building 108) and Leahy Hall (Building 117) on the Lower Yard.
Decatur Avenue Bridge Repair/Replacement	Currently, the Decatur Avenue Bridge that connects the Upper and Lower Yards is in fair condition. Some repairs of this bridge could occur soon; however, the bridge might need major repairs or replacement within the next 5 to 10 years. Details about possible repairs or replacement are not known at this time, so this project is only considered notionally in this cumulative analysis.
Mill Creek Marina Repair Fire Suppression System	This project is to replace the fire suppression and potable water system at Mill Creek Marina.

Project Name	*Project Description*
Historic Macdonough Hall Structure and Systems Repair	Macdonough Hall (Building 102) is a 128,000-square-foot, six-story-tall building that was last substantially renovated in 1982. The building is in need of extensive interior architectural modifications and improvements, including HVAC system replacement, removal of lead and asbestos materials, electrical system replacement, plumbing modifications and repairs, and structural modifications and improvements. A contract was awarded in the fall of 2021 to complete this work. This project is ongoing.
Repair Utility Tunnel Leaks Under Maryland Avenue	The Navy will repair utility tunnel leaks under Maryland Avenue on the Lower Yard.
Annapolis Partners property redevelopment	The former 46.5 acre site of the David Taylor Research Center (also known as the former NSWC, Carderock Division) is currently under ownership of Annapolis Partners, LLC. Proposed redevelopment of the site, as outlined in the Anne Arundel County Redevelopment Agreement (2002) and Redevelopment Site Plan (2004), includes a private-sector employment center/office park with supporting hotel and retail uses. The 2002 Redevelopment Agreement set performance standards for redevelopment, including square footage (630,000), number of employees (1,958) and daily traffic counts (751–758 peak hours). The timeline for redevelopment of the site is currently unknown.
Severn River Oyster Restoration	Ongoing oyster restoration within the Severn River began in 2024 with the goal of enhancing coastal ecosystems and water quality. This project is being implemented by the CBF, Severn River Association, USNA, MDNR, and NSA Annapolis (CBF, 2023).

4.3 Cumulative Effects Analysis

4.3.1 Air Quality

The study area for the air quality cumulative effects analysis is the Metropolitan Baltimore Intrastate Air Quality Control Region. All projects listed in Section 4.2 could affect air quality. For present and future actions, construction would generate short-term criteria pollutant and fugitive dust emissions while ground-disturbing activities are occurring. Air emissions are based on the size and complexity of the project and whether construction activities would disturb the soil. All present and reasonably foreseeable future actions could collectively increase emissions of criteria pollutants temporarily in and around construction sites at NSA Annapolis, but variations in the timing of projects would distribute emissions temporally. Estimated emissions under Alternatives 1 and 2 for the proposed RV Park are well below *de minimis* thresholds. Per regulation, by demonstrating that this project would be below *de minimis* thresholds as discussed in Section 3.1, the project is not considered significant individually or cumulatively within the airshed. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on air quality within the study area.

4.3.2 Water Resources

The study area for the water resources cumulative effects analysis includes Mill Creek, Whitehall Bay, Severn River, downstream water resources, wetlands, and groundwater. Any of the projects listed in Section 4.2 that would result in changes in impervious surface or occurring within or near waterways could contribute directly or indirectly to effects on water resources, either positively or negatively. For past, present, and future projects at or nearby NSA Annapolis, there is potential to cause short-term,

minor, cumulative effects on water resources due to ground disturbance that could result in stormwater runoff from construction activity. Long-term, minor cumulative effects on water resources would likely occur from an overall net increase in impervious surface, though most projects involve repairing, replacing, and/or demolishing existing impervious surface. These actions would slightly increase surface runoff and sedimentation of surface waters and wetlands and increase flood risk. However, effects would be minimized through the Navy's use of BMPs and strict adherence to local, state, and federal regulations and permit/MDE-approved ESC plan requirements. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on water resources within the study area.

4.3.3 Geological Resources

The study area for the geological resources cumulative effects analysis is NSA Annapolis and adjacent areas. Any of the projects listed in Section 4.2 that involve ground disturbance could affect geological resources. Cumulative effects on geological resources within the study area would occur from ground disturbance during construction, such as grading, utility trenching, and tree clearing. These actions would increase exposed soil and cause soil compaction, sedimentation, and erosion. However, effects would be less than significant because the Navy would use BMPs to minimize effects from the installation's projects. In addition, an MDE-approved ESC plan is required for projects where construction disturbance is greater than 5,000 square feet and/or 100 cubic yards. A stormwater management plan would be included with the ESC plan approval. The ESC plan approval would address erosion and sediment control during construction. An NPDES General Construction Permit would be required for projects where disturbance exceeds an acre. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on geological resources within the study area.

4.3.4 Cultural Resources

The study area for the cultural resources cumulative effects analysis is the installation, and the viewsheds within the installation to the Severn River and Mill Creek. All projects listed in Section 4.2 could affect cultural resources, either directly or indirectly.

The Navy meets its stewardship requirements for cultural resources under Sections 106 and 110 of the NHPA. The installation has an ICRMP that is a reference and a planning tool for management and preservation of cultural resources while maintaining mission readiness (NAVFAC Washington, 2018b). Alterations of a resource eligible for the NRHP must be done to meet the Secretary of the Interior's Standards for the Treatment of Historic Properties. Consultation with the SHPO (and other appropriate parties) must be undertaken prior to a project's commencement. In this way, the Navy works to identify, avoid, minimize, and/or mitigate any potential effects on cultural resources when implementing individual projects.

The Navy is consulting with the SHPO regarding this Proposed Action. The Proposed Action, when combined with past, present, and reasonably foreseeable future projects, would not be expected to result in significant effects on cultural resources within the study area.

4.3.5 Visual Resources

The study area for the visual resources cumulative effects analysis is NSA Annapolis, and the viewsheds within the installation. Any of the projects listed in Section 4.2 that involve exterior construction could

affect visual resources on the installation. Construction projects at NSA Annapolis, whether past, present, or future, temporarily alter the area's visual character due to activities like construction, demolition, and renovation. Each project is expected to have negligible to minor effects depending on its location, size, intensity, and duration. The Navy follows the Installation Appearance Plan to ensure development enhances the installation's civic beauty, protects natural and cultural resources, preserves architectural integrity, and improves quality of life. Additionally, the IDP ensures consistent and appropriate physical appearance and function. Some projects, like the seawall repairs, might affect important viewsheds, but Programmatic Agreements ensure minimal visual effect through design reviews. Therefore, the Proposed Action is not expected to significantly affect the visual character of the installation or contribute to major cumulative effects on the area's visual resources. The Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on visual resources within the study area.

4.3.6 Biological Resources

The study area for the biological resources cumulative effects analysis is NSA Annapolis and the surrounding terrestrial biological community. All projects listed in Section 4.2 could contribute directly or indirectly to effects on biological resources. For past, present, and future projects at NSA Annapolis, construction projects would be expected to generate some noise and fugitive dust, which could directly or indirectly affect wildlife species. Individually, projects would be expected to have negligible-to-minor effects, depending on the biological community where the construction occurs, and would vary with the size, intensity, and duration of construction activities. Given the amount of terrestrial and aquatic habitat in the vicinity of NSA Annapolis, wildlife would be able to retreat if disturbed by noise, dust, or increased human activities.

Construction activities occurring along the waterways that surround NSA Annapolis, including the Center for Cyber Security Studies, Alumni Service Center and Headquarters facility, seawall and shoreline repair and restoration activities, and the Proposed Action, could have cumulative contributions of increased disturbance to waterfowl and migratory birds. However, long-term, adverse cumulative effects are not expected. Further, activities that occur within and along shorelines, and that increase net impervious surfaces in the area, could affect overall water quality in the adjacent waterbodies. Construction activities would adhere to federal and state regulations and permits and would use sediment- and erosion-control measures and, if applicable, stormwater controls to minimize potential water quality effects on waterways and the biological resources within them. With these controls, long-term, adverse cumulative effects on the local marine environment are not expected from construction activities. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on biological resources within the study area.

4.3.7 Land Use

The study area for the land use cumulative effects analysis includes NSA Annapolis and the surrounding communities within Anne Arundel County. All the projects listed in Section 4.2 could contribute directly or indirectly to effects on land use. Most projects with the potential for cumulative effects on land use have generally improved land use compatibility in accordance with development goals found within installation planning frameworks and countywide planning initiatives, ensuring compatibility with the installation's mission and adjacent land uses. The proposed RV Park would be compatible with the current land use planning, reinforcing the objectives of orderly growth and compatibility among adjacent properties. Neither Alternative 1 or 2 would result in individual or cumulative effects with the

potential to exceed significance thresholds. Past projects with the potential for cumulative effects have predominantly focused on facility repairs and modernization, with minimal reductions in developable space or major changes to existing land uses. Seawall restoration and floodproofing measures along Ramsay Road have indirectly preserved developable space by mitigating potential damage from extreme weather events. Countywide upgrades to stormwater runoff controls would be expected to improve overall land use resilience while offsetting past, present, and future development effects from increases in impervious surfaces and floodplains. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on land use within the study area.

4.3.8 Noise

The study area for the noise cumulative effects analysis is the populations adjacent to NSA Annapolis. Any of the projects listed in Section 4.2 could directly or indirectly contribute to effects on noise, primarily those with exterior or outdoor construction requirements. Cumulative effects could occur during construction activities if they were adjacent to noise-sensitive receptors and were occurring at the same time. However, noise from construction would be intermittent and temporary. Noise from RV Park operations would generally contribute to the overall ambient noise environment; however, it would not exceed the ambient noise levels of the surrounding environment. Therefore, the Proposed Action, when combined with past, present, and reasonably foreseeable future projects, would not result in significant effects on noise within the study area.

4.3.9 Infrastructure

The study area for the infrastructure cumulative effects analysis is NSA Annapolis and the adjacent communities within Anne Arundel County. Any of the projects listed in Section 4.2 could directly or indirectly affect infrastructure resources such as utilities and transportation infrastructure. The Proposed Action would introduce minor, incremental demands on utility and transportation infrastructure. Projects like the modernization of the Nimitz Library, utility bridge replacement, and stormwater management improvements are likely to enhance infrastructure at the installation and within Anne Arundel County. Projects that involve new buildings typically include upgrades and modernization efforts that minimize adverse cumulative effects on utility infrastructure. Improvements to the potable water system and upgrades to the wastewater treatment facility ensure reliability and adequate capacities. Ongoing and future stormwater management through low-impact development designs address aging infrastructure challenges. The electrical system, with its redundant feeders and planned substation upgrades, is adequate to accommodate the RV Park's incremental demand along with cumulative actions.

NSA Annapolis and Anne Arundel County would likely benefit from enhanced efficiency, capacity, and resilience of infrastructure because of past, present, and reasonably foreseeable future actions. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on infrastructure within the study area.

4.3.10 Transportation

The study area for the transportation cumulative effects analysis is NSA Annapolis and the adjacent communities within the greater Annapolis region. Several actions have influenced or will influence the transportation network and are relevant to this analysis. While some of these projects are not located in

the immediate vicinity of the Proposed Action, they share the same local and regional transportation networks within NSA Annapolis and the surrounding area. Past projects such as the construction of the Automated Vehicle Access Gate improved traffic flow and security. The USNA Alumni Association Headquarters and parking lot added vehicle access points and increased traffic volumes in the Perry Center area. Similarly, the Center for Cyber Security Studies project included a parking garage and associated infrastructure to support increased vehicle use.

Present and future actions, such as the Utility Bridge Replacement, will temporarily disrupt vehicle and pedestrian connectivity between the Upper and Lower Yards during construction. Planned enhancements to pedestrian and bicycle facilities in the USNA Bridge Area–designed by the State Highway Administration–will improve non-motorized connectivity and reduce vehicular congestion in the greater Annapolis area. Repairs or replacement of the Decatur Avenue Bridge may also create temporary traffic effects during construction but will ultimately improve long-term transportation connectivity and capacity between the Upper and Lower Yards. Additionally, the proposed redevelopment of the Annapolis Partners property could increase regional traffic due to the inclusion of a private-sector employment center, hotel, and retail development.

The Proposed Action would result in minor increases in construction traffic and long-term vehicular traffic from RV Park patrons. The Proposed Action is expected to contribute minor increases in daily visitor and RV traffic. When combined with other actions in the study area, short-term disruptions, such as those associated with bridge repairs or utility construction, could temporarily affect access and traffic flow. However, long-term improvements to pedestrian and bicycle infrastructure, enhanced security and access through the Automated Vehicle Access Gate, and increased multimodal connectivity are expected to mitigate these effects. As a result, the cumulative effect on transportation from the Proposed Action when combined with other actions is anticipated to be neutral to beneficial, with minor short-term disruptions outweighed by long-term enhancements to the transportation network. Therefore, the Proposed Action, when combined with the past, present, and reasonably foreseeable future projects, would not result in significant effects on transportation within the study area.

4.3.11 Public Health and Safety

The study area for the public health and safety cumulative effects analysis is NSA Annapolis. Construction projects listed in Section 4.2 could directly or indirectly contribute to effects on public health and safety. Construction activities have minor safety risks while these activities are ongoing, but these are short-term and would not cumulatively pose unacceptable safety risks. Other ongoing and future activities would not present notable long-term safety concerns. The Proposed Action would enhance long-term public health through the expansion of camping opportunities, particularly those for people with disabilities. Therefore, the Proposed Action, when combined with past, present, and reasonably foreseeable future projects, would not result in significant effects on public health and safety within the study area.

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Appendix A
Relevant Laws and Regulations

Appendix B
Public Engagement and Agency Correspondence Materials

Appendix C
General Conformity Applicability Analyses and Record of Non-Applicability (RONA)

Appendix D
Noise Calculations

Appendix E
Assumptions and Estimates for Utility Infrastructure Effects